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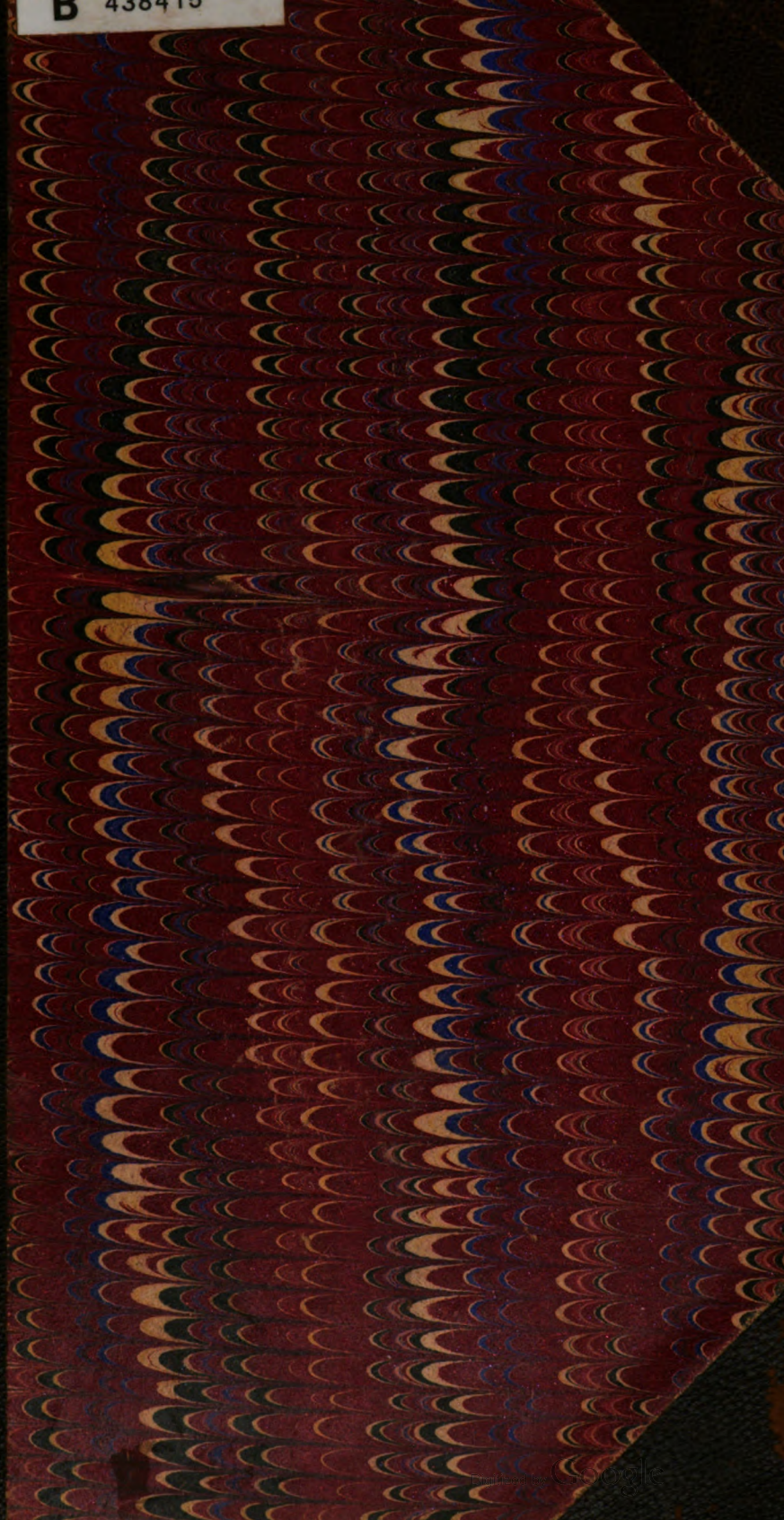
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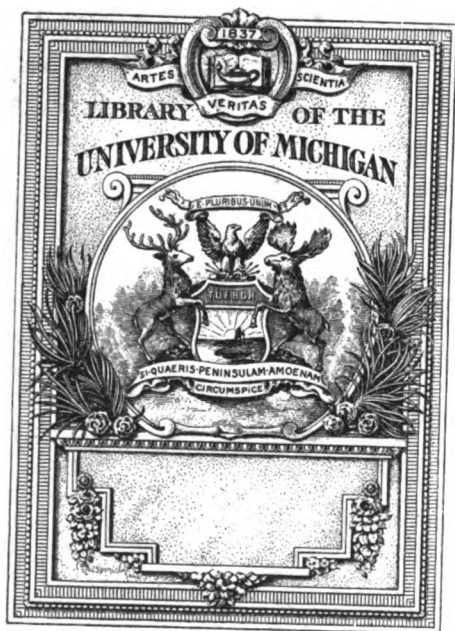
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REPORTS

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No. 124.—JANUARY, 1891.

INVALIDISM AND OLD AGE INSURANCE IN GERMANY.

REPORT BY CONSUL-GENERAL EDWARDS, OF BERLIN.

I have the honor to transmit a translation of the instructions issued by the Berlin bureau with respect to the provisions of the invalidism and old age insurance law, which will go into effect January 1, 1891.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, December 8, 1890.

INVALIDISM AND OLD AGE INSURANCE.

[Inclosure in Consul-General Edwards's report.—Translation.]

(1) The invalidism and old age insurance law will go into effect January 1, 1891. From that day on the following persons must be insured if they have ended their sixteenth year and have employment for which they receive wages or salary (shares of profits or payments in kind):

(a) All department workmen, assistants, journeymen, apprentices, without regard to the amount of their wages; furthermore, officials whose annual salaries do not exceed 2,000 marks. Under the term assistants are included secretaries, chancery clerks, cash messengers, chancery servants, and similar employes whose services are chiefly mechanical; but not to be regarded under this head are persons employed in higher bureau service, managers, secretaries, recorders, bureau chiefs, etc. Excepted from insurance obligation are, further, all imperial and State officers, as well as commercial officials with claim to pension.

(b) All servants. Not included under the term servants are persons with scientific or artistic education who occupy positions higher than servants; for example, tutors, governesses, private secretaries, companions, housekeepers, house teachers, etc.

(c) Shop employes and apprentices (exclusive of those employed in apothecary shops) whose earnings do not exceed 2,000 marks. To shop employes especially belong book-keepers, cashiers, drummers, clerks, saleswomen, also persons holding business powers of attorney and authorized agents.

No. 124—I.

(d) Persons forming part of the crews of German sea vessels and of vessels employed in internal navigation.

Furthermore, it is to be remarked that temporary employment, also, creates the insurance obligation, unless in exceptional cases provided for by the Federal Council. Further, employment for which as a recompense only free maintenance is given (no cash payment) does not create the insurance obligation.

(2) The insurance of all persons included under 1 engaged in business in Berlin is to be made at the Berlin invalidism and old age insurance bureau, Molken-Markt No. 1. A registration or removal from the register application is not required, as, for instance, for sickness insurance. The persons mentioned will, from January 1, 1891, on, be insured on the strength of the law.

(3) The payment of the insurance premiums is made by the sticking of stamps in a receipt book, not, as in sickness insurance, by cash payments direct. The receipt book will be supplied free of cost by the chief officers of the police district in which the person to be insured is employed. Persons in question must therefore, in the course of the month of December—at any rate before January 1—go to the police station for these receipt books, having with them their legitimization papers (for example, service book or military papers).

It is also permitted that the work giver may apply for the receipt books for his employés, and, therefore, in particular, larger employers are advised to communicate with the police station chiefs on the subject.

The stamps can be obtained at all post-offices and at the offices made known by signs. Every stamp represents the amount for one week, and the employer must stick the same in the book, his being also the obligation to obtain the stamps. The pasting in of the stamp takes place always at the time of paying the wages. If wages are paid weekly, at the close of the week a stamp must be pasted in; if the payment is quarterly—as, for instance, is usually the case with servants—then at the close of the quarter the requisite number of stamps is to be pasted in the book. Half of the value of the stamps used the employer may deduct from the amount of wages to be paid. The stamps are not all of the same value. All the persons insured in accordance with the amount of their wages are divided into four wage classes, and for each class a different stamp is to be used. The method by which the amount of annual wages is determined will be explained below.

The foregoing proclamation gives, in condensed form, the principal regulations of interest to persons having the insurance obligation, and especially to employers. For details the law itself must be consulted, in which connection we beg to state that by direction of the city council of Berlin, for the practical use of employer and insured, a guide to the invalidism and old age insurance law has been prepared, which is to be had at all bookstores and at the publishers, 12 Steglitzer Strasse.

WAGE CLASSES AND STAMPS OF THE INVALIDISM AND OLD AGE INSURANCE.

All the insured, male and female, are divided into four classes: Class 1, those whose annual wages do not exceed 350 marks; class 2, those whose annual wages are from 350 to 550 marks; class 3, those whose annual wages are from 550 to 850 marks; class 4, those whose annual wages exceed 850 marks. The actual annual earnings are not accepted as the basis of calculation, but the annual yearly earnings of the separate insured persons will be calculated in accordance with regulations fixed by law, the weightiest of which for Berlin are the following:

(1) For those insured persons who are members of communal sickness insurance associations, factory, building, or guild insurance associations, the annual earnings are taken as three hundred times the average daily wages for which the person is insured in the sickness insurance association. The amount of daily wages is taken from the records of such associations. If the person, for instance, is insured in the first class of the sickness insurance association, and if the average daily wages of the person are then calculated as 3 marks, the amount of annual earnings is taken as $300 \times 3 = 900$ marks, or within the fourth class (see above).

(2) For those insured persons who do not belong to the associations mentioned under 1 (servants, shop employés, and apprentices), also for persons who are members of registered assistance associations, the annual earnings are estimated as being three hundred times the amount of the usual daily wages of day laborers in Berlin. These wages are: For males, 2.40 marks; for females, 1.50 marks; for male apprentices over sixteen years, 1.30 marks; for female apprentices over sixteen years, 1 mark. Hence the annual earnings of males who do not belong to the associations mentioned under 1—for instance, shop employés and male servants—are $300 \times 2.40 = 720$ marks, and these persons belong to the third class. The annual earnings of females who do not belong to any of the associations mentioned under 1—for instance, female servants or saleswomen—are $300 \times 1.50 = 450$ marks, and these persons belong to the second class.

Notwithstanding these regulations concerning the calculation of the annual earnings and the fixing of the wage classes, employers and employés may agree that the insurance shall be in a higher class than the amount of wages necessitate; for instance, female servants belong to the second class. If the employer and employé agree that the insurance shall be made in the third or fourth class, this can be done. The insurance in a high wage class has, as a consequence, the payment of a higher premium; the higher the class, the larger the premium.

For each wage class a different stamp will be issued, and until further notice the price of the stamps will be: Class 1, 14 pfennigs; class 2, 20 pfennigs; class 3, 24 pfennigs; class 4, 30 pfennigs.

FOREIGN MEDICAL PRACTITIONERS IN BRITISH COLONIES.

REPORT BY MR. WHITE, SECRETARY OF LEGATION AT LONDON.

I have the honor to inclose copy of a note from Lord Salisbury, with accompanying memorandum from the colonial office, which I have just received, containing a summary of the conditions under which foreign medical practitioners are allowed to practice their profession in the British colonies.

HENRY WHITE,
Secretary of Legation.

UNITED STATES LEGATION,
London, December 9, 1890.

LORD SALISBURY TO MR. LINCOLN.

[Inclosure in Mr. White's report.]

FOREIGN OFFICE, *December 6, 1890.*

SIR: With reference to my note to Mr. Lincoln of the 23d of September on the subject of the regulations in force in this country and British colonies for the admission of foreign medical practitioners to practice their profession, I have now the honor to transmit to you a memorandum which I have received from the secretary of state for the colonies summarizing those regulations in the colonies as far as can be ascertained.

Lord Cross has requested me to suggest to you that it would be advisable for any American practitioner who may desire to practice in any colony to make special inquiry as to the law of that colony.

As regards the law of Jamaica, His Lordship points out that no person can be registered as a medical practitioner therein, without previous examination by a board of examiners in the colony, who is not on the medical register of the United Kingdom, and that, unless he was so registered in the United Kingdom, it was impossible to register the gentleman in Jamaica whose case was referred to in Mr. Lincoln's letter of September 16.

JAMES FERGUSSON.

4 FOREIGN MEDICAL PRACTITIONERS IN BRITISH COLONIES.

MEMORANDUM.

The following is a résumé of the conditions under which foreign medical practitioners are at present admitted to practice in the British colonies:

In most cases local registration is compulsory, and for this fees, which vary in different colonies, are usually charged.

DOMINION OF CANADA.

Ontario.—Medical or surgical degree, or diploma from college approved by the medical council, or registration as foreign practitioner in United Kingdom.

Quebec.—Course of at least four years' medical study before receiving the foreign diploma.

Nova Scotia.—Any medical diploma which satisfies the provincial medical board.

New Brunswick.—Proper diploma of any sort.

Prince Edward Island.—Proper diploma granted in Great Britain, Ireland, British colonies, or any country in Europe.

British Columbia.—Not admissible.

Manitoba.—Passing of examination before committee or registration in United Kingdom.

Northwest Territories.—Not admissible.

Newfoundland.—No restriction.

AUSTRALASIA.

New South Wales, Queensland, and Victoria.—Regular course of study of not less than three years' duration in a school of medicine, together with diploma, degree, or license, after due examination, from some university or college recognized for that purpose in the country to which it belongs, entitling to practice medicine in that country, or (in Victoria) registration in the United Kingdom.

Tasmania.—Registration in United Kingdom.

South Australia.—Registration in United Kingdom or diploma considered by medical board equal thereto.

Western Australia, New Zealand, and Fiji Islands.—Registration in United Kingdom.

BRITISH WEST INDIES AND BRITISH SOUTH AMERICA.

Jamaica.—Passing examination in the colony, or, in the case of a person not registered in the United Kingdom, the holding of a diploma, license, or certificate conferring or evidencing the possession by him of any qualification in respect whereof he would be entitled to be so registered.

British Honduras.—Registration in United Kingdom or diploma from college or institution of known repute.

British Guiana.—Registration in United Kingdom.

Bahama Islands.—No restriction; must pay fee of £10 for permission to supply medicines.

Trinidad and Tobago.—Registration in United Kingdom or satisfactory diploma and examination by medical board.

Barbadoes, Grenada, St. Vincent, and St. Lucia.—Registration in United Kingdom.

Leeward Islands.—Not admissible, except in Dominica, where diploma from recognized body in Europe or America is recognized.

Bermuda Islands.—Registration in United Kingdom, or regular diploma, or qualification after examination by university or school of medicine of known standing and character.

Falkland Islands.—No provision.

BRITISH AFRICA.

Cape of Good Hope and British Bechuanaland.—Possession of certificate satisfactory to Government.

Mauritius.—Degree or diploma of foreign university and passing examination entitling to practice in country in which degree or diploma has been obtained.

Natal.—Registration in United Kingdom; otherwise as in Mauritius; annual license fee of £5.

St. Helena.—Registration in United Kingdom.

Sierra Leone.—No restriction.

Gold Coast and Lagos.—Not admissible.

BRITISH POSSESSIONS IN EUROPE.

Gibraltar.—Certificate or other satisfactory proof to governor of due qualification to practice medicine.

Malta.—Registration in United Kingdom.

Cyprus.—Diploma from recognized school of medicine.

BRITISH ASIA.

Ceylon.—No restriction.

Hong-Kong.—Diploma which may be found satisfactory after full examination by medical board.

Straits Settlements.—Registration in the United Kingdom.

TARIFF OF CUBA.

REPORT BY CONSUL-GENERAL WILLIAMS, OF HAVANA.

The following import duties are exclusive of the 25 per cent. extra war subsidy and \$1 landing duty on each 1,000 kilograms, gross weight, of landed good, except coals, and are collected wholly in Spanish gold, with a deduction of only 5 per cent.

Table showing import duties.

No.	Articles.	Duty.
1	Agricultural implements:	
	Common classes, such as plows, shares, pickaxes, spades, hoes, rakes, harrows.....	\$2.10 per 100 kilograms.
	Common knives, machetes, or cutlasses—	
	For chopping, with or without sheaths.....	Free.
	For cutting cane.....	Do.
	Of superior classes, such as Collins's, which, though denominated as chopping, can be used for other purposes, and imitation of same.....	27 cents per kilogram.
	Plowshares, narrow hoes, and spades, for exclusive use of agricultural labor.....	Free.
	Steam-plows, all classes.....	Do.
2	Animals:	
	Horses and mares—	
	More than 63 inches in height.....	\$72.50 per head.
	63 inches and less.....	\$29.00 per head.
	Mules—	
	More than 58½ inches.....	\$34.80 per head.
	Below 58½ inches.....	\$10.20 per head.
	Cattle.....	\$3.60 per head.
	Hogs of all breeds.....	\$5.20 per 100 kilograms.
	Sheep, lambs, goats, etc.....	96 cents per head.
	Asses.....	\$4.80 per head.
	Above-named animals, when imported to improve breeds.....	Free.
	Wild animals, including dogs.....	20 per cent. ad valorem.
	Poultry—	
	Hens, geese, pigeons, ducks, etc.....	6½ cents per kilogram.
	Eggs, all sorts, of poultry.....	\$6.25 per 100 kilograms.

Table showing import duties—Continued.

No.	Articles.	Duty.
2	Animals—Continued. Poultry—Continued. Tame birds, parrots, peacocks, etc.....	58 cents each.
	Singing birds, etc.....	29 cents each.
3	Art works: Statues and other stone and marble fancy articles, and paving stones .	29 per cent. ad valorem.
	Oil paintings of celebrated artists.....	Free.
4	Barks and extracts: Barks— Winter, sassafras, and other analogous barks.....	5½ cents per kilogram.
	Angostura, Peruvian, elm, etc.....	10½ cents per kilogram.
	Quinine, orchanet.....	26½ cents per kilogram.
	For tanning.....	8 per cent. ad valorem.
	Extracts— Special pharmaceutical products and medicines which do not constitute those called "patent" or secret remedies, as tinctures, compound oils, ointments, medicinal vinegars, gum paste, sugar-coated and pectoral preparations, plasters and sticking-plasters, etc.....	12½ cents per kilogram.
	Vegetable, as opium, ipecac, rhubarb, and analogous in value....	\$3.78½ per kilogram.
	Arnica, belladonna, valerian, sarsaparilla, stramonium, and others analogous.....	63½ cents per kilogram.
	Colchicum, thorn-apples, ratany, and all such kinds.....	\$1.26½ per kilogram.
	Brazilite, Campeachy licorice, and similar kinds prepared for industrial purposes.....	9½ cents per kilogram.
	Distilled waters, as orange flower, rose, valerian, and others analogous in value.....	Do.
5	Blackening and inks: Shoe-blackening, liquid or paste.....	4½ cents per kilogram.
	Writing-ink— In earthenware bottles, including weight of same.....	2½ cents per kilogram.
	In glass bottles, including weight of same.....	3½ cents per kilogram.
6	Bone and bone goods (excepting buffalo and ivory): Common buttons and molds for same, horse-combs, and other similar articles of about same weight.....	24 cents per kilogram.
	Polished buttons, molds for same, hair, tooth, nail, and clothes brushes, mouth-pieces, and other similar articles, though combined with other materials.....	\$1.01½ per kilogram.
7	Books, maps, engravings, music.....	Free.
	If bound (duty levied according to binding).....	29 per cent. ad valorem.
8	Brass and manufactures: Yellow metal, Dutch gold, plates and sheets.....	\$10.95 per 100 kilograms.
	Burnished, in wires, bars, rivets, nails, etc.....	\$13.05 per 100 kilograms.
	Door knockers, bells of all sizes, beds, cradles, chairs, cocks, faucets, scales, sieves, hinges, and other similar articles, including adhering iron and wooden parts.....	\$15.40 per 100 kilograms.
	Hasps, rings, jingle bells, curtain headings, buttons, locks and padlocks, spittoons, clothes-racks, bolts, tubing, pins, hooks and eyes, and other similar articles, although combined with iron.....	\$26.40 per 100 kilograms.
	Bridle curbs, lock escutcheons, beer pumps, dog-collars, lamps of all sizes and classes, patent pulleys, table springs, thimbles, and other similar articles, though combined with iron or steel.....	48 cents per kilogram.
9	Breadstuffs and grain: Rice— Clean.....	\$1.95 per 100 kilograms.
	Unshelled, in hull.....	95 cents per 100 kilograms.
	Oats, barley, corn, rye, pea-nuts, and similar (unshelled).....	\$1.05 per 100 kilograms.
	Wheat, pearl-barley, bird seed, and similar classes.....	\$3.15 per 100 kilograms.
	Manufactures of corn, oats, rye, etc., such as maizena.....	\$4.20 per 100 kilograms.
	Corn meal, rye flour, bran.....	\$1.05 per 100 kilograms.
	Wheat flour, including weight of package.....	\$4.69½ per 100 kilograms.

Table showing import duties—Continued.

No.	Articles.	Duty.
9	Breadstuffs and grain—Continued.	
	Bread and biscuit (sea or pilot), biscuit (fine sorts, as soda, milk, lemon, and others), in wooden boxes and barrels, including weight of inside package when these are small barrels, trunks, or boxes (plain tin boxes excepted).....	\$6.30 per 100 kilograms.
10	Bricks, tiles, and slabs :	
	Commonest class of bricks.....	24 cents per 100 kilograms.
	Bricks and slabs valued at \$25 to \$50 per thousand.....	29 per cent. ad valorem.
	Bricks, tiles, and tubes (glazed).....	68½ cents per 100 kilograms.
	Bricks and tiles, superior quality.....	\$1.08 per 100 kilograms.
	Roofing tiles.....	30 cents per 100 kilograms.
	For turrets and ornamental.....	4½ cents per kilogram.
11	Brooms and brushes :	
	Common millet brooms and ship brushes.....	6 cents per kilogram.
	Shoe-brushes.....	7½ cents per kilogram.
	Hair and clothes brushes of inferior kinds, floor brushes, common dusters, cob cleaners (including handles), and horse brushes.....	12½ cents per kilogram.
12	Candles :	
	Sperm, stearine, and other fine classes.....	14½ cents per kilogram.
	Tallow and similar inferior classes.....	\$6.25 per 100 kilograms.
13	Condensed milk and other canned goods not specified elsewhere, including weight of package.....	15½ cents per kilogram.
14	Carriages and horse-cars :	
	Carriages, coaches, landaus, etc., of four wheels.....	\$192 each.
	Carriages of two seats, stages of four wheels, and omnibuses with wooden tops.....	\$144 each.
	Buggies and dog-carts, breaks, and others of two or four wheels— With one or two seats and leathern tops.....	\$60 each,
	Plain and without leathern tops, as the tilbury, etc. (excepting fancy ones), and those of similar kinds.....	\$30 each.
	Loose pieces for carriages, such as springs, wheels, frames, etc.....	24 per cent. ad valorem.
15	Railroad cars, all kinds.....	4 per cent. ad valorem.
16	Chemicals :	
	Acids—	
	Mineral, for industrial purposes, as arsenic, muriatic, and sulphuric for the trade.....	35 cents per 100 kilograms.
	Nitric, for the trade and pure, also pure sulphuric and muriatic... Vegetable and mineral, for all purposes, as acetic, boracic, crude gallic, and others of analogous value.....	\$5.05 per 100 kilograms.
	Citric, tannic, tartaric, phenic, and others of analogous value.....	8½ cents per kilogram.
	Applicable exclusively to medicines, as lactic, benzoic, cyanic, phosphoric, valeric, and others of analogous value but of small importation.....	23½ cents per kilogram.
	Alum, bicarbonate and carbonate of soda, potash and lime of ammonide, iron, magnesia, and others of analogous value.....	\$2.52½ per kilogram.
	Caustic soda for soap and watch makers, sulphur (in flour or paste), etc.....	\$1.90 per 100 kilograms.
	Chlorate of potash.....	50 cents per kilogram.
	Oxides of iron, sulphuret of carbon, cyanate of potassium, soluble cream of tartar, etc.....	\$4.15 per 100 kilograms.
	Chlorides and oxides of mercury, chloroform, creosote, citrate of iron, and other products analogous in value.....	15½ cents per kilogram.
	Phosphorus.....	28½ cents per kilogram.
	Quinine and its salts, morphia, alkaloids, gold, silver, platinum, and other salts of precious metals, and other similar products, for whatever purpose or application.....	\$8.70 per kilogram.
	Preparations known as patent medicines, in glass packages up to 0.125 liter capacity.....	\$10.08½ per kilogram.
	Mineral waters, natural and artificial, exclusive of packages.....	58½ cents per kilogram.
		\$2.60 per 100 kilograms.

Table showing import duties—Continued.

No.	Articles.	Duty.
16	<p>Chemicals—Continued.</p> <p>Natural and chemical products and drugs such as are generally imported in powders in their natural state or prepared, such as tartaric acid, Rochelle salts, red lead, litharge, carbonate of leads, oxide of zinc, subnitrate of bismuth, carbonate of iron, oxide and iodures of mercury, calomel, arsenical acid, sublimate of sulphur, carmines, emery chromes, vermilion, bronze, dextrine starch and arrow-root, bicarbonate of soda, red coral, protoxide of manganese, Venetian talc, verdigris, and other similar kinds, are dutiable according to the items to which they belong.</p> <p>An extra duty of 15 and 35 per cent. will be levied on such products whose pulverization constitutes a special industry, viz, 15 per cent. on powders whose alteration is below 25 per cent. (as those of rhubarb, Florence lily, mallow, hound's-tongue and licorice roots, mustard and flax seeds, gum arabic, cinnamon bark, guaiacum wood, tartar-emetic, gall-nuts, pepper of all kinds and similar seeds, nitrate of potash, sugar of milk, sulphur of antimony, cream of tartar, calcinated bones, salt ammoniac, chlorate of potash, and other similar articles), and 35 per cent. on those the alteration of which is above 25 per cent. (as opium, tragacanth gum, resinous gum, ipecac; turpeth, jalap, and sarsaparilla roots; castoreum, flowers and leaves in general, sneezewort, ammonium, poison-nuts, Peruvian bark, cantharides, colocintida, etc.).</p>	
17	<p>Clocks and watches—wood, iron and other metals (except gold and silver), either fine or common, and gas meters.....</p> <p>On gold and silver watches duties are levied as on jewelry of same metals.</p>	24 per cent. ad valorem.
18	<p>Coal:</p> <p>Animal.....</p> <p>Mineral.....</p> <p>Vegetable.....</p>	<p>60½ cents per 100 kilograms.</p> <p>48 cents per 1,000 kilograms.</p> <p>8 per cent. ad valorem.</p>
19	Copper and copper wares.....	Same duties as those for brass and manufactures. (See No. 8.)
20	<p>Cotton and cotton goods:</p> <p>Raw cotton.....</p> <p>Cotton-waste, for cleaning machinery.....</p> <p>Candle wicks and tapers.....</p> <p>Small wares, as tape, lace, braid—</p> <p>With wooden fixings.....</p> <p>With iron or copper (small braids or shoe-strings with copper ends).</p> <p>In buckram, for tailors' use.....</p> <p>Cotton textures—</p> <p>Plain, smooth, raw, white, or dyed, as madapollams, calicoes, nankeen, uncarded, covered with cotton and other analogous texture:</p> <p>Up to 10 threads.....</p> <p>10 to 16 threads.....</p> <p>17 to 22 threads.....</p> <p>Plain and smooth, printed list, or such whose threads have been dyed before weaving, as calicoes, cambrics, shirtings, and similar kinds:</p> <p>Up to 12 threads.....</p> <p>13 to 16 threads.....</p> <p>17 to 19 threads.....</p> <p>20 to 22 threads.....</p> <p>Tulle, plain, flowered, or embroidered, white or colored:</p> <p>Up to 5 threads.....</p> <p>More than 5 threads.....</p> <p>Laces:</p> <p>Common classes.....</p> <p>Lightest classes, plain or embroidered, white or colored.....</p>	<p>\$6 per 100 kilograms.</p> <p>\$7.30 per 100 kilograms.</p> <p>52½ cents per kilogram.</p> <p>66 cents per kilogram.</p> <p>36 cents per kilogram.</p> <p>33½ cents per kilogram.</p> <p>\$15 per 100 kilograms.</p> <p>\$21 per 100 kilograms.</p> <p>35 cents per kilogram.</p> <p>\$26 per 100 kilograms.</p> <p>\$31.50 per 100 kilograms.</p> <p>50½ cents per kilogram.</p> <p>65 cents per kilogram.</p> <p>\$1 per kilogram.</p> <p>\$3 per kilogram.</p> <p>90 cents per kilogram.</p> <p>\$2 per kilogram.</p>

Table showing import duties—Continued.

No.	Articles.	Duty.
20	<p>Cotton and cotton goods—Continued.</p> <p>Cotton textures—Continued.</p> <p>Light goods, fine or common, close, tight, or thick; also, open woven or fine textures, termed light or not, and all those containing 23 threads and upwards, plain, smooth, or worked in the loom, white, printed, or dyed, as muslins, jaconets, organ-dies and cambrics, lawns, ginghams, and the so-called lining muslins:</p> <p>Up to 8 threads.....</p> <p>9 to 12 threads.....</p> <p>13 to 16 threads.....</p> <p>17 to 22 threads.....</p> <p>23 to 28 threads.....</p> <p>29 to 34 threads.....</p> <p>35 threads and upwards.....</p> <p>Embroidered by hand or in the loom or otherwise adorned will pay as per their respective items, with 20 per cent. extra.</p> <p>Embroidered by hand or in the loom and adorned with silk or wool.....</p> <p>Net-work, as shawls, head ornaments, and all such articles.....</p> <p>Quilted and vesting, plain or worked, white or colored.....</p> <p>Twilled, white, printed, or colored, of common class, such as canvas, duck or sail-cloth, lamp wicks, and hose.....</p> <p>Of superior classes, such as drills, damasks, calicoes, or madapol-lams, cross twilled, and all such goods.....</p> <p>Velvet, shag, and carpet-like textures, carded, such as blankets, crude, white, and colored.....</p> <p>Shag textures, cut, as carpet pieces, blankets, and all such articles..</p> <p>Velvet-like textures, such as velveteen, plain or worked.....</p> <p>Net-work in stockings, undershirts, hose, gloves, drawers, caps, etc.....</p> <p>Plush textures, uncut, as shawls and the so-called Turkish towels..</p> <p>Tapes and ribbons:</p> <p>White or colored.....</p> <p>Plain or worked—</p> <p>For bonnets and dresses, velveteen ribbons, etc.....</p> <p>Such as are used for boots, bridles, or reins.....</p> <p>Handkerchiefs:</p> <p>In pieces or single, with or without fringes, with no hand-work, will pay according to foregoing items.</p> <p>Hemmed or adorned with any hand-work will pay as above, with 20 per cent. extra.</p> <p>Hemmed, eye-hemmed, and with insertion work—</p> <p>Up to 17 threads.....</p> <p>18 to 20 threads.....</p> <p>21 to 23 threads.....</p> <p>24 threads and upwards.....</p> <p>Ready-made clothing will pay according to the textures of which it is made, with 100 per cent. extra.</p> <p>The counting of the threads in shirts will be made on the bosom, col-lar, and cuffs, and when these parts are of linen and the balance of the shirt of cotton 50 per cent. extra will be levied.</p> <p>Parasols and umbrellas.....</p> <p>Textures with an India rubber basis, such as cotton elastic, etc.....</p>	<p>\$35 per 100 kilograms.</p> <p>\$60 per 100 kilograms.</p> <p>\$100 per 100 kilograms.</p> <p>\$1.20 per kilogram.</p> <p>\$1.50 per kilogram.</p> <p>\$2 per kilogram.</p> <p>\$2.50 per kilogram.</p> <p>20 per cent. ad valorem.</p> <p>\$1 per kilogram.</p> <p>Do.</p> <p>\$20 per 100 kilograms.</p> <p>\$35 per 100 kilograms.</p> <p>\$20 per 100 kilograms.</p> <p>72½ cents per kilogram.</p> <p>60 cents per kilogram.</p> <p>\$130 per 100 kilograms.</p> <p>45 cents per kilogram.</p> <p>30 cents per kilogram.</p> <p>\$1 per kilogram.</p> <p>35 cents per kilogram.</p> <p>\$1.30 per kilogram.</p> <p>\$1.90 per kilogram.</p> <p>\$2.55 per kilogram.</p> <p>\$3.80 per kilogram.</p> <p></p> <p></p> <p>\$1.20 per dozen.</p> <p>80 cents per kilogram.</p>
21	<p>Earthenware:</p> <p>Stone and china, smoking pipes, spit-boxes, pans, flower pots, domes-tic and cooking utensils, and all such articles, glazed or unglazed.....</p> <p>Toys, jars, jugs, bottles, pitchers, water filters, etc.—</p> <p>Unglazed.....</p> <p>Carved, engraved, or painted.....</p> <p>Flint ware of all kinds not elsewhere specified.....</p>	<p>\$1.55 per 100 kilograms.</p> <p>\$5.20 per 100 kilograms.</p> <p>15½ cents per kilogram.</p> <p>\$3.15 per 100 kilograms.</p>

Table showing import duties—Continued.

No.	Articles.	Duty.
21	Earthenware—Continued.	
	White porcelain goods.....	\$7.55 per 100 kilograms.
	Of superior class, as China, Japan, etc.....	31 $\frac{1}{2}$ cents per kilogram.
	Sèvres porcelain in all shapes and fancy porcelain objects for all uses.....	43 $\frac{1}{2}$ cents per kilogram.
22	Fertilizers of all kinds, natural or chemical.....	Free.
23	Fish:	
	Live.....	\$2.10 per 100 kilograms.
	Common sorts, dried, smoked, salted, or pickled, as Halifax and Newfoundland cod, herring, mackerel, hake, haddock, mullet, pressed sardines, exclusive of weight of brine.....	\$1.80 per 100 kilograms.
	Of superior classes, dried or pickled, such as anchovies, tunny, salmon, cod sounds, Norwegian, Swedish, and Scotch cod, stock-fish, and all classes of live and dried shell-fish, including weight of brine and glass package, if any.....	\$2.85 per 100 kilograms.
	Finned sardines, including weight of inside package.....	\$12.50 per 100 kilograms.
	Other fish preserved in oil not specified above, pickled or otherwise preserved, oysters in their own water, or canned, including weight of inside package.....	18 $\frac{1}{2}$ cents per kilogram.
24	Flax, hemp, and jute:	
	Raw, and oakum, tarred and untarred.....	\$2.50 per 100 kilograms.
	Cordage or rigging.....	\$6.25 per 100 kilograms.
	Rope of all kinds.....	13 cents per kilogram.
	Pack-thread.....	8 $\frac{1}{2}$ cents per kilogram.
	Twine and crude, untwisted thread, including shoe-makers'.....	18 cents per kilogram.
	Crude textures—	
	With colored stripes, smooth or cross woven, and hemp cloth, packing canvas, and hessians of up to 5 threads.....	\$5 per 100 kilograms.
	Plain and smooth, with or without colored stripes, as osnaburghs, sackcloth, tambour, sail-cloth, Ghent cloth, Russia, nankeen, etc., of all kinds, hemp cloth and hessians, of 6 to 10 threads.....	\$15 per 100 kilograms.
	Bramantes, Irish linen, Holland linen, silesias (colored and brown), and analogous textures of from 11 to 16 threads.....	\$30 per 100 kilograms.
	Brown textures, with or without colored stripes, cross woven or twilled, as duck and drills, of all kinds.....	Do.
	Plain and smooth textures, striped, listed, or dyed—	
	Up to 9 threads.....	\$22.50 per 100 kilograms.
	10 to 12 threads.....	\$32.50 per 100 kilograms.
	13 to 16 threads.....	\$50 per 100 kilograms.
	17 to 20 threads.....	80 cents per kilogram.
	21 to 23 threads.....	\$1 per kilogram.
	24 to 27 threads.....	\$1.30 per kilogram.
	28 to 30 threads.....	\$2 per kilogram.
	31 threads and over.....	\$3 per kilogram.
	Light textures, as French and British lawns and all similar goods, will pay 60 per cent. extra.	
	Thick and heavy shirting silesia and such linens will pay as above, with 20 per cent. extra.	
	Twilled or cross-woven textures, damask-like, flowered, white, printed, dyed, or striped, as drills, damasks, and that called "jipa-japa," and analogous, in pieces, table-cloths, napkins, and towels.....	\$60 per 100 kilograms.
	Tape or ferret ribbons for foot straps, girths, etc., will pay according to the preceding items.	
	Stockinet textures—	
	Stockings, gloves, undershirts, drawers, and all such goods:	
	Of common class, or with seams.....	50 cents per kilogram.
	Fine sorts, without seam.....	\$2.50 per kilogram.
	Tulles, nets, laces, embroidered bands, and all kinds of embroidered textures.....	29 per cent. ad valorem.
	Handkerchiefs—	
	Without seam will pay as the textures of this section, with 20 per cent. extra.	

Table showing import duties—Continued.

No.	Articles.	Duty.
24	Flax, hemp, and jute—Continued. Handkerchiefs—Continued. Hemmed will pay as above, with 50 per cent. extra. With edges bordered, though made in the loom, will pay as above, with 100 per cent. extra. Ready-made clothing in general and shirts with plain bosoms will pay as the textures of this section, with an extra charge of 100 per cent., the threads being counted in the bosoms, collars, and cuffs. Embroidered shirt bosoms and all sorts of dress, skirt, under-clothing, pillow-case, cradle and embroidered trimmings for layettes, will pay as above items, with an extra charge of 250 per cent.	
25	Fruits : Green and fresh, such as apples, peaches, pears, melons, grapes, and olives, including weight of inside package when imported in bottles. Dried and shelled, like almonds, hazel-nuts, walnuts, chestnuts, pecans, etc., and pressed, like raisins, prunes, figs, peaches, etc..... Unshelled, as almonds, dates, and others as above of superior classes, in glass bottles or other fine packages, including weight of same..... Preserved in their own juice, in brandy, sirup, or in paste, also stuffed olives and other preserved fruits and sweetmeats not specified, candies, chocolate, etc., including weight of inside glass, tin, or wooden packages, when any.....	\$2.50 per 100 kilograms. \$3.80 per 100 kilograms. \$9.45 per 100 kilograms. \$8 per 100 kilograms.
26	Furs, fine and fancy classes, such as lion, tiger, bear, ermine, otter, leopard, and similar ones.....	29 per cent. ad valorem.
27	Glass and glassware : Common bottles, demijohns, flasks, and similar articles..... Window-glass and such classes, plain or decorated, white or colored— Up to 600 square inches each..... 601 to 1,000 square inches..... Of more than 1,000 square inches..... Looking-glasses without frames will pay as the preceding items, with 500 per cent. extra; with frames, of up to 1,000 square inches each, will pay as above items, with 500 per cent. extra; with frames, of more than 1,000 square inches, as above, with 1,000 per cent. extra. White glass and crystal, colored or painted, molded or shaped in bottles, flasks, vases, cups, tumblers, jars, sugar and sweetmeat dishes, lamps, lanterns, and similar articles not specified..... Common glass articles, as retorts, mortars, and other articles for the use of druggists and apothecaries, not polished with emery..... Crystal— In the shape of lamp shades, globes, tubes, chandeliers, fancy lanterns, etc..... In the shape of toys and other fancy articles..... Spectacle glasses, watch glasses, and the so-called muslin glass, in all shapes.....	\$1.55 per 100 kilograms. \$3.80 per 100 kilograms. \$5.05 per 100 kilograms. \$7.55 per 100 kilograms. \$8.70 per 100 kilograms. \$7.20 per 100 kilograms. \$31.50 per 100 kilograms. 72½ cents per kilogram. \$3.15½ per kilogram.
28	Glucose, ammoniac, hyposulphite of soda, litharge, nitrate of potash, nitrate of soda, sulphate of zinc, and other products analogous in value...	3½ cents per kilogram.
29	Glue : Common or inferior..... Isinglass and boiling.....	5½ cents per kilogram. 31½ cents per kilogram.
30	Gunpowder and mining wicks : In barrels and other large packages..... In tins and small packages.....	8½ cents per kilogram. 16½ cents per kilogram.
31	Hair— Human— Rough..... Manufactured..... Horse— Bristle and wool..... For pillows, cushions, etc.....	\$6.50 per kilogram. 29 per cent. ad valorem. \$1.90 per kilogram. 15½ cents per kilogram.

Table showing import duties—Continued

No.	Articles.	Duty.
32	Hair—Continued.	
	Horse—Continued.	
	For manufactured textures, plain, cross-woven, or twilled, for furniture covers, sieves, etc.....	47½ cents per kilogram.
	In other fancy articles not mentioned elsewhere.....	29 per cent. ad valorem.
32	Hay, common and dried, straw and grass, millet straw for broom manufactures.....	80 cents per 100 kilograms.
33	Hides and skins:	
	Common, ass, horse, and cow skins—	
	Dried and hair on.....	\$6.25 per 100 kilograms.
	Green.....	\$2.10 per 100 kilograms.
	Leather—	
	Tanned (sole).....	\$9.40 per 100 kilograms.
	Varnished (patent).....	\$20.85 per 100 kilograms.
	Unvarnished (split), for industrial purposes.....	\$18 per 100 kilograms.
	Hides and sole-leather are understood to be those which preserve their primitive thickness; those called buffalo, varnished, or patent, leather, and other similar classes will pay duties according to corresponding items.	
	Sheep, goat, and similar skins with hair on.....	\$15.65 per 100 kilograms.
	Tanned or dressed skins—	
	Morocco, sheep, etc.....	\$26.10 per 100 kilograms.
	Superior, as fine, black, saturated calf, kid, and shagreen.....	\$49.55 per 100 kilograms.
	Varnished, as patent-leather, buffalo, calf, and other unvarnished of the most superior classes, as pig-skin, chamois, etc.....	\$78 per 100 kilograms.
34	Horn and horn goods:	
	Buffalo, manufactured in any form.....	\$1.74 per kilogram.
	Common horn goods will pay duties as bone goods. (See No. 6.)	
35	Ice	17½ cents per 100 kilograms.
36	India rubber and manufactures:	
	Plates or sheets, machinery belts, hose, and similar articles.....	26½ cents per kilogram.
	Shoes, boots, spatterdashes, carpet-bags, life-preservers, and other similar articles.....	36 cents per kilogram.
	Water-proof—	
	With linen and cotton.....	87 cents per kilogram.
	With wool.....	\$1.30½ per kilogram.
	With silk.....	\$2.61 per kilogram.
	Vulcanized and wrought, in combs, head-gear, tooth, nail, and clothes brushes, pen-holders, and other similar articles, though combined with other materials, as metal and bone.....	\$1.45 per kilogram.
	Catheters, syringes, bands for holding papers, nipples, letter weights, and similar articles, though combined with any other material.....	\$2.32 per kilogram.
	All other articles of less value, such as finger and ear rings, bracelets, breastpins, watch chains, etc.....	29 per cent. ad valorem.
37	Iron and manufactures:	
	Cast and in pigs.....	26½ cents per 100 kilograms.
	Portable stoves, plates, boilers, furnaces, doors and hatches, caldrons, tubes, and similar articles.....	\$1.55 per 100 kilograms.
	Forged, tinned, enameled, and galvanized, or not, in pans, coffee-pots, skillets, colanders, buckets, ladles, skimmers, cooking and chamber pots, wash-basins, fish-kettles, frying-pans, roasting cylinders, and all other articles of analogous sorts.....	\$4.20 per 100 kilograms.
	Cast, in hinges, balls, balconies, cooking-stoves, columns, water-tanks, staircases, and other similar objects for building; also, sarcophagi, garden chairs and sofas, and other articles of the same kind.....	\$2.10 per 100 kilograms.
	Forged, in same articles mentioned above and tubes.....	\$3.15 per 100 kilograms.
	Cast and forged nails.....	\$3.00 per 100 kilograms.
	Anvils and other similar articles.....	\$2.10 per 100 kilograms.
	Copying hand-presses.....	5½ cents per kilogram.
	Forged, in rods and bars, railings, trunnels, hoops, plates for tanks, clarifiers, roofs, floorings, platforms, and other similar objects.....	\$1.30 per 100 kilograms.

Table showing import duties—Continued.

No.	Articles.	Duty.
37	Iron and manufactures—Continued.	
	Galvanized, in articles of above item.....	\$3.15 per 100 kilograms.
	Plates cut for sugar molds.....	35 cents per 100 kilograms.
	Forged locks, padlocks, bolts, though containing small parts of yellow metal.....	\$7.30 per 100 kilograms.
	Forged and cast, in common horse, stiff, and snaffle bits, spurs, stirrups, unpolished, and with or without any small ordinary metal plates.....	\$15.65 per 100 kilograms.
	Same articles as above polished, bronzed, gilt, silvered, or plated.....	\$56.75 per 100 kilograms.
	Hooks and eyes, handles, knockers, rings, with or without screw and bolt, large fish-hooks, screws of all sorts of more than 3 inches long, harpoons, door bolts and hinges, horseshoes, latches, pulleys, carriage builders' and saddlers' linchpins, hurdle rings, steps, hooks, buckles, springs, screws and bolts, braces, and all similar articles.....	\$3.15 per 100 kilograms.
	Same as above bronzed, silvered, gilt, and plated—	
	Common classes.....	\$13.05 per 100 kilograms.
	Superior classes.....	50¢ cents per kilogram.
	Chains—	
	Up to ¼-inch links.....	4½ cents per kilogram.
	More than ¼-inch links.....	\$2.60 per 100 kilograms.
	Waiters and trays, cash, paper, and jewelry boxes, and other similar articles not otherwise specified.....	29 per cent. ad valorem.
	Fish-hooks.....	26½ cents per kilogram.
	Beds, cots, and cradles—	
	With or without metal ornaments, columns included.....	\$5.20 per 100 kilograms.
	Plated and in imitation of copper will pay as above, with 100 per cent. extra.	
	Sieves and rat traps with wire cage, wooden parts included.....	7½ cents per kilogram.
	Dish covers, net food safes.....	22½ cents per kilogram.
	Spice and coffee hand-mills—	
	With wooden or iron box.....	9½ cents per kilogram.
	Immovable, with or without fly-wheels, for grinding coffee, and corn-shellers.....	\$4.80 per 100 kilograms.
	Wire-netting.....	\$4.70 per 100 kilograms.
	Screws for hinges and other purposes, up to 3 inches long.....	\$7.30 per 100 kilograms.
	Hair-pins—	
	Varnished or not.....	4½ cents per kilogram.
	With or without steel point and unvarnished.....	17½ cents per kilogram.
	Pack needles, larding pins, skewers, punches, and awls.....	36½ cents per kilogram.
	Shoe-makers' leather cutters.....	24½ cents per kilogram.
	Thimbles.....	21½ cents per kilogram.
	Canvas and common sewing-needles—	
	German.....	72½ cents per kilogram.
	British.....	\$4.35 per kilogram.
	Steel pens.....	\$1.81½ cents per kilogram.
	Watch chains, key rings, and all other small steel or polished iron not specified.....	29 per cent. ad valorem.
	Tools of a common class applicable to agriculture and other trades... Hammers for carpenters, coopers, masons, shoe-makers, tongs, shovels, cold-chisels, coopers' punches, and other similar.....	\$5.65 per 100 kilograms.
	Knives for carpenters, coopers, and tanners, common planes, jack, smoothing, rabbit, and round jointers, and other similar, wooden parts included.....	8½ cents per kilogram.
	Chisels of all classes, augers, compasses, sickles, nippers, pliers, screw-drivers, hollow punches, saw-sets, hand-vises, squares, fleams, corking tools, loose blades for planes, and similar tools.....	14½ cents per kilogram.
	Carving and table knives, with or without forks—	
	With bone, horn, whalebone, iron, or wooden handle.....	\$18 per 100 kilograms.
	With ivory, tortoise, mother-of-pearl, and plated or gilt handle....	60 cents per kilogram.
	Penknives and razors.....	29 per cent. ad valorem.
	Hand-saws of all classes, circular and vertical, for mills.....	22½ cents per kilogram.

Table showing import duties—Continued.

No.	Articles.	Duty.
37	Iron and manufactures—Continued.	
	Saws, with or without frames and pits.....	10½ cents per kilogram.
	Screw augers without handle, trunnel drivers, and common augers with wooden handle.....	12 cents per kilogram.
	Carpenters' breast bits, with and without augers, and loose augers for same.....	33½ cents per kilogram.
	Screw-plates of all sizes, including tinnerns' stationery.....	13½ cents per kilogram.
	Wrought iron.....	48 cents per kilogram.
	Scissors—	
	Steel and burnished, assorted :	
	Common classes.....	\$2.52½ cents per kilogram.
	Superior.....	\$4.41½ cents per kilogram.
	Tailors' and gardeners'.....	\$1.04½ cents per kilogram.
	For shearing animals, etc.....	30 cents per kilogram.
	Knives for chopping wood—	
	Belgian and German, of three grooves, with or without sheaths, and other similar classes.....	7½ cents per kilogram.
	Of superior classes.....	12 cents per kilogram.
	Tools of general use, as hatchets, axes, adzes, trowels, and other of like sorts.....	10½ cents per kilogram.
	Arms, fire and steel, of all kinds.....	29 per cent. ad valorem.
	Scales, steelyards, and all such classes.....	24 per cent. ad valorem.
	Rails for railroads, public and private.....	4 per cent. ad valorem.
38	Jewelry, with or without precious stones—gold and silver plate, jewels, and watches and precious stones of all kinds.....	5 per cent. ad valorem.
39	Lead :	
	Pigs, sheets, balls, and tubes.....	\$9.85 per 100 kilograms.
	Toys, tops for bottles, and similar articles.....	13½ cents per kilogram.
40	Leather goods :	
	Boots—	
	Mounting and coachmen's.....	\$14.40 per dozen pairs.
	Men's half-boots or gaiters with elastic or buttons.....	\$5.04 per dozen pairs.
	Partly silk, for ladies.....	\$8.17½ per dozen pairs.
	Of other classes, adorned with silk and other materials.....	\$4.32 per dozen pairs.
	Without garniture, and laced or buttoned.....	\$2.88 per dozen pairs.
	Shoes, laced, and slippers for women and men, and of classes not specified.....	\$1.80 per dozen pairs.
	Boots and shoes for children, of up to 23 centimeters for boys and 20 centimeters for girls, will pay according to class, as per preceding items, with 50 per cent. less.	
	Sundry leathern goods—	
	Common manufactured, as harnesses for carts and other saddlers' articles, such as whips, saddle-trees (when partly of leather), holsters, valises, carpet-bags, hat-cases, etc., and leathern and oil-cloth articles, including weight of wood, pasteboard, and metals, when any.....	19½ cents per kilogram.
	Of a better class than above, as harnesses for carriages, common saddlery, with or without pig-skin, morocco, or corduroy, partly embroidered or with some parts of silk or floss silk, and articles annexed, as bridles, straps, etc., and for machinery, hose for water, and lining for hats.....	40 cents per kilogram.
	Of superior quality, as horse saddles, with pig or buffalo skin sides, adorned or not with velvet top, embroidered or not, fine harnesses for one-horse carriage, value of which does not exceed \$40, or for two horses and with a value of \$80, straps annexed, embossed, embroidered, or otherwise adorned, hunting goods, buffalo, shagreen, Russia, and fancy hand-bags for ladies.....	29 per cent. ad valorem.
	Gloves—	
	Kid.....	\$4.35 per kilogram.
	Gazelle, buck, and chamois.....	\$1.67½ per kilogram.

Table showing import duties—Continued.

No.	Articles.	Duty.
41	Lime and cement—chalk, sand, lime, plaster, grindstones, filters, well stones, and other similar goods, also marble dust whenever it is proved that its value is equal or less than that of lime and chalk.....	35 cents per 100 kilograms.
42	Malt liquors (ale, porter, and lager): In wooden packages..... In bottles.....	\$3.65 per 100 kilograms. \$8.35 per 100 kilograms.
43	Machinery: Steam, hydraulic, electric, and all other engines, motors, implements, apparatus, and machines for whatever purpose and of whatever materials, manometers, well pumps, sewing-machines, windmill, gasometers, and all necessary pieces for same..... All complete machinery and apparatus exclusively applicable to the sugar industry, from the cartage and grinding of cane to the manufacture, packing, and extraction of the sugar, when imported by planters..... Extra pieces for same will pay 8 per cent.	8 per cent. ad valorem. 1 per cent. ad valorem.
44	Medical, mathematical, and physical instruments, and others of the kind not specified.....	29 per cent. ad valorem.
45	Naval stores: Resin (white pitch and pine), including weight of package..... Vegetable tar and pitch, including weight of package..... Crude turpentine and resin gums..... Spirits of turpentine..... Oil-cake..... Codliver and whale oils, refined or crude, including weight of inside package..... Mineral oil— Crude petroleum..... Purified or refined coal-oil..... Kerosene, benzine, paraffine, and lubricating and painting greases and oils, including weight of inside package..... Vegetable oil— Common classes..... Solid, as stearine, whale, artificial, mineral wax, etc..... Tallow, raw and melted.....	90 cents per 100 kilograms. 60 cents per 100 kilograms. 3½ cents per kilogram. \$3.65 per 100 kilograms. \$5.20 per 100 kilograms. Do. 96 cents per 100 kilograms. 7½ cents per kilogram. 4½ cents per kilogram. \$5.20 per 100 kilograms. \$13.05 per 100 kilograms. \$4.45 per 100 kilograms.
46	Bees-wax: Manufactured..... In masks.....	43½ cents per kilogram. \$3.19 per kilogram.
47	Paints: Ground and prepared in oil, of all kinds..... Common classes, as ocher, red ocher, carbonate of lime, etc..... Superior to above, as white lead and zinc, calcinated violet, etc..... Superior to above, as red lead..... Superior to above, as Chinese white and artificial blue ocher, etc..... Superior to above, as Dutch and British vermilion, chrome-yellow, and fine green (oxide of copper)..... Superior classes of all sorts, as blue, carmine, China, vermilion, and other similar classes.....	\$2.60 per 100 kilograms. 80 cents per 100 kilograms. \$1.90 per 100 kilograms. \$2.85 per 100 kilograms. \$4.75 per 100 kilograms. \$8.20 per 100 kilograms. 29 per cent. ad valorem.
48	Paper: Writing, drawing, printing, cigarette, and card-board of all kinds..... Copying, blotting, China, marbled, granite, and other similar fancy classes..... Printed—newspapers, geographic maps, and books the importation of which is authorized..... Copying, vegetable, embroidery, silvered, and gilt of inferior classes..... Silvered and gilt, superior..... Printing, white— Inferior, for newspapers..... Superior and colored of all descriptions, as used for wrapping.....	\$13.05 per 100 kilograms. 26½ cents per kilogram. Free. 63½ cents per kilogram. \$2.52½ per kilogram. \$3.15 per 100 kilograms. \$9.40 per 100 kilograms.

Table showing import duties—Continued.

No.	Articles.	Duty.
48	Paper—Continued.	
	Wrapping—	
	Fine brown.....	\$4.20 per 100 kilograms.
	American yellow, common sorts, tarred, and British gray.....	\$2.85 per 100 kilograms.
	Light brown, as manila and such sorts.....	\$9.40 per 100 kilograms.
	Wall-paper—	
	Plain	11½ cents per kilogram.
	Gilt, silvered, and velveted.....	23½ cents per kilogram.
	Lead, tin, rag, and sand.....	5½ cents per kilogram.
	Paper prepared for any use, as small books for cigarettes, cut for bouquets, sweetmeats, screens, envelopes, and other similar articles will pay as above, with an extra duty of 50 per cent.	
	Printed or lithographed of one color, as labels for cigars and cigarettes..	14½ cents per kilogram.
	Chromo-lithographs of several colors.....	29 cents per kilogram.
	Printed, lithographed, or engraved, painted or not.....	43½ cents per kilogram.
	Books, blank and ruled, with or without metallic edges, will be levied on as per item they belong to, with an extra charge of 50 per cent.	
	Pasteboard.....	\$1.80 per 100 kilograms.
	Manufactured:	
	Hats, etc	12 cents per kilogram.
	Small boxes for pills, etc.....	24 cents per kilogram.
	Masks.....	58 cents per kilogram.
	Boxes, painted or gilt, for jewelry, sweetmeats, etc.....	\$4.35 per kilogram.
49	Plated ware of all kinds.....	29 per cent. ad valorem.
50	Provisions:	
	Beef, pork, hams, etc.—	
	Of ordinary classes, as smoked, salted, hung beef, and such.....	\$6.25 per 100 kilograms.
	More superior than above, as mutton, smoked tongues, family beef, Westphalia hams, etc.....	\$15.10 per 100 kilograms.
	Pickled beef.....	\$1.80 per 100 kilograms.
	Pickled pork.....	\$3 per 100 kilograms.
	Jerked beef.....	\$2.10 per 100 kilograms.
	Sausage and stuffed meats.....	\$15 per 100 kilograms.
	Canned meats, with weight of cans.....	\$25.20 per 100 kilograms.
	Lard, pork, for cooking.....	\$7.30 per 100 kilograms.
	Butter, including weight of glass or earthen package or of salt when imported in firkins.....	\$11.35 per 100 kilograms.
	Cheese, United States and similar kinds.....	\$6.25 per 100 kilograms.
51	Quicksilver and other products of analogous value.....	28½ cents per kilogram.
52	Seeds:	
	Cheapest classes (medicinal), as linseed, mustard, and similar.....	3½ cents per kilogram.
	Higher value, as cardamom, carthamus, and other such kinds.....	28½ cents per kilogram.
	Seeds and plants of all kinds intended for planting and herbariums of a scientific character.....	Free.
53	Soap:	
	Common kinds.....	\$4.20 per 100 kilograms.
	Perfumed—	
	When packed separate, inside package included.....	42½ cents per kilogram.
	When put up three or more in one package.....	13½ cents per kilogram.
54	Spirits:	
	Pure or compound, with or without sugar, as gin, potato, and barley brandies and similar kinds—	
	In wooden packages and demijohns.....	\$9.30 per 100 liters.
	In bottles.....	\$13.95 per 100 liters.
	Inferior classes, as brandy, cognac, and rum—	
	In wooden packages and demijohns.....	\$4.65 per 100 liters.
	In bottles.....	\$8.35 per 100 liters.
	Superior classes—	
	In wooden packages and demijohns.....	\$11.50 per 100 liters.
	In bottles.....	\$15 per 100 liters.

Table showing import duties—Continued.

No.	Articles.	Duty.
54	Spirits—Continued. Inferior classes of cognac, brandy, and rum are understood to be those worth, in their place of production, not over 25 cents per liter in wooden casks and \$5 per case of one dozen bottles. Besides above duty, an extra consumption tax of 2 cents per liter is collected for the municipality.	
55	Starch.....	\$5.05 per 100 kilograms.
56	Steel and steel ware : Plates and bars..... Pieces for watch-makers..... Files, rasps, and other tools of similar classes..... The above duties will be levied only on articles manufactured of pure steel; on others, where steel is combined with iron, they will be collected on the latter metal.	\$4.20 per 100 kilograms. 8 per cent. ad valorem. 12 cents per kilogram.
57	Tin and tin-plate goods : Pigs, bars, and sheets..... Plates..... Oil cans and cruets, candlesticks, sugar dishes, cooking pans, coffee, milk, and chocolate pots, snuffers, funnels, spittoons, jars, bath tubs, cake molds, plates, pitchers, dishes, lamp reflectors, spoons, skimmers, ladles, and other similar articles.....	\$10.45 per 100 kilograms. \$3.65 per 100 kilograms. \$13.05 per 100 kilograms.
53	Tobacco : Chewing, of all kinds..... Snuff and other manufactures whose importation is allowed in Cuba..	10½ cents per kilogram. 5½ cents per kilogram.
59	Vegetables : Esculent, as celery, garlic, onions, cabbage, turnips, potatoes, beets, carrots, and others of similar kinds..... Pickled, weight of vinegar and inside package included..... Preserved in their own juice or canned, also mushrooms, prepared mustard, and all similar goods, including inside package..... Beans, peas, etc.....	\$1.05 per 100 kilograms. \$6.25 per 100 kilograms. \$12.60 per 100 kilograms. \$1.80 per 100 kilograms.
60	Wood, and wooden goods : Pine boards and scantlings..... Poplar..... Maple and cedar..... Walnut..... Mulberry, Campeachy, and other dye-woods..... Flooring, planed, chiseled, and otherwise prepared so that it can not be included in above items, will pay an extra duty of 25 per cent. Timbers, hard, unhewn..... Cooperage and hoops, shaved and unshaved, for hogsheads, pipes, etc.— More than 220 centimeters..... 220 centimeters or less..... Staves for pipes..... Hogshead, pipe, and barrel shooks, with heading, but exclusive of hoops..... Hogshead headings and loose box shooks for sugar..... Empty hogsheads, pipes, and barrels of more than 30 liters capacity and boxes, new or old, will pay as preceding classification, with 30 per cent. extra. Empty barrels of less than 30 liters capacity, buckets, tubs, wash and bath tubs, plates and dishes, hair-dressers' blocks, lasts, mallets, tool handles, rat traps without wire, cocks, small boxes for druggists, spoons and forks, chocolate beaters, and all similar articles..... Empty hogsheads in which molasses was previously exported from Cuba and are re-imported and empty barrels in which fresh fruits were exported from this country and are returned here for the same purpose.....	\$4 80 per 1,000 feet. \$7.20 per 1,000 feet. \$9.60 per 1,000 feet. \$12 per 1,000 feet. 17½ cents per 100 kilograms. \$7.20 per 1,000 feet. \$5.16 per thousand. \$2.16 per thousand. \$7.80 per thousand. 26½ cents each. 15 cents each. 6 cents per kilogram. Free.

Table showing import duties—Continued.

No.	Articles.	Duty.
60	Wood and wooden goods—Continued.	
	Carpenters' screws and presses, wheelbarrows with or without iron parts, printing cases, pump stands, and all similar articles.....	4½ cents per kilogram.
	Ship blocks and pulleys of all kinds.....	12½ cents per kilogram.
	Water-levels.....	19½ cents per kilogram.
	Clothes-racks, oars, and handspikes.....	3 cents per kilogram.
	Wooden pieces prepared for carriage and saddle makers, such as wheel spokes and felloes, shafts, saddle trees and bows, yokes for horse collars, and other analogous articles with or without iron parts.....	\$10.45 per 100 kilograms.
	Shingles.....	4½ cents per 100 kilograms.
	Match splints.....	1½ cents per kilogram.
	Veneering boards.....	29 per cent. ad valorem.
	Hydraulic pumps, small boats, and similar articles.....	24 per cent. ad valorem.
	Painters' brushes—	
	Not weighing more than 1 kilogram each dozen.....	48 cents per kilogram.
	Weighing more than 1 kilogram each dozen.....	24 cents per kilogram.
	Hair and clothes brushes (common and fine classes), tooth, nail, and clothes brushes, combs, lead-pencils, rulers with or without metallic edges, pen-holders, squares, meters, etc.....	89 cents per kilogram.
	Carpenters' pencils.....	12 cents per kilogram.
	Fine dusters—	
	Large.....	96 cents per kilogram.
	Small.....	\$1.92 per kilogram.
	Furniture of common wood, as pine, chestnut, cherry, common maple, white and black poplar, painted or not, or varnished, also common frames, painted or prepared for gilding.....	24 cents per kilogram.
	Chairs of above woods of no more than 3½ kilograms' weight and rocking-chairs of no more than 5½ kilograms' weight each.....	78 cents per kilogram.
	Of less than above weights, chairs and rocking-chairs will pay same duty as furniture of common wood.	
	Furniture of wood superior to those above mentioned, as oak, walnut, mahogany, fine maple, and similar ones.....	43½ cents per kilogram.
	Furniture of finer woods than the preceding ones, as rose-wood, ebony, and all such kinds, gilt or with metal ornaments.....	58 cents per kilogram.
	The above furniture (except chairs and stools), the weight of which does not exceed 2 kilograms each piece, will pay as the preceding item, with 50 per cent. extra.	
	In furniture with marble pieces the weight of this will be included.	
	Loose marbles and looking-glasses, although appertaining to furniture, will pay according to the item to which they belong.	
	Trunks and valises of all sizes—	
	Covered with paper, canvas, or raw leather, with or without leathern straps.....	4½ cents per kilogram.
	Covered with dressed sheep, morocco skins, oil-cloth, or any other analogous cover, when wood predominates in their construction.....	9½ cents per kilogram.
61	Wool and woollen goods:	
	Stuffing or waste wool, as generally used by saddlers.....	3½ cents per kilogram.
	Long or twisted wool, and in small ware, as buttons, tassels, laces, fringes, galloons, braids, sashes, tapes, etc., or worsted—	
	With or without wooden spools.....	94½ cents per kilogram.
	With iron or other metal spools or frames.....	43½ cents per kilogram.
	Textures of pure wool—	
	Plain:	
	Up to 10 threads.....	72½ cents per kilogram.
	10 to 16 threads.....	\$1.30½ per kilogram.
	17 to 20 threads.....	\$1.74 per kilogram.
	21 threads and above.....	\$2.61 per kilogram.
	Light and transparent, and gauze, as barege.....	\$3.85 per kilogram.

Table showing import duties—Continued.

No.	Articles.	Duty.
61	Wool and woolen goods—Continued.	
	Textures of pure wool—Continued.	
	Plain, cross-woven, or twilled	\$1.74 per kilogram.
	Mixed with cotton in the warp	\$1 per kilogram.
	Mixed with silk	\$2.62 per kilogram.
	Haired on one or both sides	\$29 per 100 kilograms.
	Pasted or gummed, as felt, etc.	\$12.50 per 100 kilograms.
	Cloths and cassimeres, ordinary thickness, as pilot, beaver, and such—	
	All worsted	85 cents per kilogram.
	With cotton mixed in warp	41 cents per kilogram.
	Cloths, cassimeres, and velvet, such as ladies' cloth, elasticotin, satin cloth, and analogous classes—	
	All wool	\$200 per 100 kilograms.
	With cotton in the warp	\$75 per 100 kilograms.
	Plain, cross-woven, twilled, or damask-like textures, rep, and all similar kinds—	
	All worsted	\$1.16 per kilogram.
	With cotton or hemp in the warp	87 cents per kilogram.
	Textures of other kinds, as Brussels, camlet, flannel—	
	All worsted	72½ cents per kilogram.
	With cotton or hemp in the warp	50 cents per kilogram.
	Plush textures, with cotton, wool, or other materials mixed, as traveling blankets, shawls, etc.	58 cents per kilogram.
	Stockinet textures, as undershirts, socks, stockings, gloves, caps, and goods otherwise shaped that do not constitute ready-made clothing	\$1.45 per kilogram.
	Carpet textures and coarse frieze carpets, exclusive of fringes	14½ cents per square meter.
	Brussels carpeting	26½ cents per square meter.
	Cut or pile, like velvet	40½ cents per square meter.
	Handkerchiefs and shawls will pay as the preceding items, according to class, with 30 per cent. extra.	
	Ribbons and tapes, pure wool or mixed with cotton, used by saddlers, and all such articles	37½ cents per kilogram.
	The same for general use will pay, as to class, by assimilation to the preceding items.	
	Ready-made clothing of alpaca, orleans, merino, and other similar textures will pay as respective textures, with 100 per cent. extra.	
	Ready-made clothing of cloth, cassimere, worsted, and textures of the same kind will pay as those respective textures, with an extra charge of 200 per cent.	
62	Wire railing	\$3.15 per 100 kilograms.
63	Zinc and calamine:	
	Nails	\$5.20 per 100 kilograms.
	Pigs	\$2.60 per 100 kilograms.
	Plates or sheets	\$3.40 per 100 kilograms.
	Lamps of all sizes or shapes, polished and bronzed	\$22.80 per 100 kilograms.
	Printing types	Do.

Table showing export duties.

Articles.	Duty.
Sugar, molasses, and rum.....	Free.
Honey.....	\$5.62½ per 100 gallons.
Wax:	
White.....	\$4.50 per 100 kilograms.
Yellow.....	\$3.37½ per 100 kilograms.
Tobacco:	
Leaf.....	\$6.30 per 100 kilograms.
Scraps.....	\$3.75 per 100 kilograms.
Cigars.....	\$1.35 per thousand.
Cigarettes.....	90 cents per 1,000 packages.
Timber*.....	8 per cent. ad valorem.

* X, 20 per cent. less; XX, 25 per cent. less.

RAMON O. WILLIAMS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Havana, December 19, 1890.

GREEK MINING AND METALLURGY.

REPORT BY CONSUL MANATT, OF ATHENS.

SCOPE AND SOURCES.

The Department's circular of August 14 calls for specific information only regarding the lead and zinc mining industry and the commerce in those metals in this district; but the search for such information has necessarily involved a considerable study of the whole subject of mining and metallurgy in Greece. The results of this study can hardly fail to have a certain interest and value for our own miners, and they are therefore presented in some detail, followed by a summary statement of the facts asked for, as far as they can be obtained or deduced.

Two difficulties stand in the way of a thoroughly satisfactory report on either of these lines. In the first place, statistical science in Greece is still in its infancy, and the figures always at hand in other countries must here be laboriously worked up. In the second place, the subject-matter, largely technical, must be studied through foreign languages, all the accessible authorities, whether persons or publications, being Greek, German, or French. For one who is neither a geologist nor a metallurgist this is a very serious disadvantage.

In the preparation of this report I have relied upon the publications of the Hellenic Government, of the Hellenic Mining Company, of the French Société des Mines, of Laurium, and especially upon the following works: "Le Laurium, par André Cordella, Ingénieur des Mines, Marseille, 1869;" "Le Laurium, par A. Cambresy, Ingénieur de la Société Minière de l'Olympe Lauriotique, Liege, 1889;" "Berg-, Hütten- und Salinenwesen von Griechen-

land, in der National Ausstellung von Athen, 1888, von Prof. Dr. Constantin Metsopoulos." The last two works, prepared in connection with the late national exposition—the fourth olympiad in the modern series—are still fresh, and have been of the greatest service to me. Indeed, in matters technical I have attempted nothing more than to sum up concisely their more important results.

But I have also visited, for the third time, the Laurium region, gone through the principal mine, witnessed the processes of extracting, dressing, and smelting the ores, and conversed with some of the leading operators. My acknowledgments are especially due to M. Cordella, director-general of the Hellenic company, and the officials of the French company; to Messrs. Dambergas and Skiadas, chiefs, respectively, of the bureaus of mining and commerce in the home department; to M. Kalogeropoulos, curator of the Boulé Library; and to Dr. Deffner, of the National Library.

GREEK MINING IN ANCIENT TIMES.

Any report on mining in Greece must be largely historical. The mines of Laurium, now worked for zinc, lead, and iron, are the very mines from which Themistocles drew the silver supply to fit out his fleet and beat back the Persian invader at Salamis (490–480 B. C.), and so to lay the foundations of the Athenian hegemony. More than this, it is thought probable that the Phenicians delved here before the Greeks came, as they are known to have done in the island of Thasos. At any rate, Thoricus was a free city before Theseus welded the Attic boroughs into a single commonwealth (that is to say, before the name of Athens appeared in history), and its importance must have been due to the mines; so that the mining industry at Laurium may possibly boast an origin as remote as thirty centuries back, while it is again in full blast to-day. In walking through the French company's great mine at Camaresa, in the heart of the Laurium region, one traverses here a gallery in active exploitation for zinc and lead and hard by another worked out by the old Greeks two or three thousand years ago. These ancient works are among the most interesting monuments of Hellenic civilization. At Laurium are found two thousand ancient shafts, with their connected galleries. These shafts average about 2 meters square (the round shaft is almost unknown) and are sunk from 20 to 120 meters in depth, but never below sea-level. The galleries open into ancient chambers, sometimes 30 feet high and 150 feet wide. According to M. Cordella's estimate, the ancients extracted from these mines a mass of mineral amounting to 105,000,000 cubic meters and yielding 2,100,084 tons of lead and 8,400 tons of silver, or a value of 4,171,378,600 drachmas.* The work employed steadily about 15,000 laborers—3,000 in the mines themselves—almost exclusively slaves. The earthen lamps, water-jugs, and picks found in our day in some of the low, tortuous passages, through which a man must work his way on hands and knees, have a pathos of their own. Slaves were cheap and the labor

* The Greek units used in this report are: Drachma = 19.3 cents; lepton = 0.01 drachma; oke = 1.28 kilograms, or 2.83418 pounds avoirdupois.

problem easy at first. Proprietors worked their own slaves or hired other people's at an obol per day—say 55 drachmas a year (a saddle-horse in Athens now brings 200 drachmas per month)—and the price of slaves ranged from 45 drachmas upward, according to quality. The pious old general Nicias had a thousand slaves hired out in the Laurium mines, perhaps at the very time when he was sacrificing the flower of the Greek race before Syracuse to the changes of the moon; and the remnant of his beaten army only had a taste of poetic justice when they lay rotting as prisoners in the Sicilian stone quarries. Labor grew dear, however, notwithstanding humanity was cheap, for food constantly advanced. The medimmus (34 to 35 kilograms) of wheat, sold in Solon's time for a drachma, had risen to 2 or 3 drachmas in the days of Aristophanes, to 5 or 6 in Demosthenes's life-time, and still later to 18. And so, underfed and overworked and buried alive in the bowels of the earth, the slaves at last revolted. According to Thucydides, twenty thousand of them escaped to the Spartan camp at Deceleia during the later years of the Peloponnesian war. That their lot was a cruel one goes without saying. Blasting powder was a thing of the distant future and hoisting machinery practically unknown. The pulley may have been used in vertical shafts, but, as a rule, the ore—every bit of it chipped out with pick and hammer—had to be carried up in goat-skins on the slaves' backs.* It could have been no picnic for the slaves, who in this way "toted" more than 100,000,000 cubic meters of ore up through the tortuous passages and galleries of these ancient mines. It was dangerous business, too, as one may infer from the fact that contracts were made—not to return the stock in safe and sound condition, but only to make the number good.

The mines were State property, and were let out to citizens on a perpetual lease, which was alienable or heritable—in effect, a sale subject to a rent varying with the production. This was at the rate of a twenty-fourth of the output, and the revenue resulting was at first distributed to the citizens. In Themistocles's time (say 489 B. C.) the annual per capita dividend was 10 drachmas, or a total of 200,000 drachmas, indicating an annual yield of 4,800,000 drachmas. By inducing his countrymen to suspend this distribution and devote the money to building up a navy, Themistocles saved Greece at Salamis. More than that, he prepared the conditions, not only of the transient commercial and political supremacy, but of the enduring intellectual empire of Athens. But the ravages of the Peloponnesian war, ending in the humiliation of Athens, operated disastrously on the mining industry. It seems to have been carried on but fitfully during the Spartan, Theban, and Macedonian supremacies, and to have quite died out in the Roman times; at least, Pausanias (in the second century) passes Laurium with the single remark that "the Athenians once had silver mines there." From that time to our own day the mines seem to have been abandoned.

* One sees very much the same thing in Greece to-day. In the archaeological excavations the workmen carry out the earth in baskets, and in building the rough stones are loaded directly on the stooping laborer's back and so carried to their place in the wall. Only a few days ago I saw gangs of men engaged in this slavish labor at Laurium in the construction of the French company's great works for washing the Camareza ores.

MODERN MINING AND METALLURGY.

Topography and geology of Laurium.—The ancient mining and metallurgy were far from being exhaustive; and so, notwithstanding an exploitation of seven centuries of which we have historical record (from the sixth century B. C. to the second century of our era), the last thirty years have seen the old mining region yielding a new harvest. Two fields remained for modern exploitation, viz: (1) The utilization, by modern processes, of ores rejected or imperfectly worked by the ancients; and (2) mining for new ores. Hence the operations now carried on at Laurium are of two kinds: (1) The working over of ancient slag and refuse (known as scoriæ and ecbolades); (2) the extraction and treatment of new minerals. To understand either there is needed a brief account of the mining region itself.

The district known by the name of Laurium comprises the southeastern projection of Attica, a wild mountain region forming a rude triangle, whose apex is Cape Sunium and the base a line drawn from ancient Anaphlystus, on the west coast, to Thoricus, on the east. The total area may be about 80 square miles, and the altitudes range from 19 to 635 meters above the sea-level.

The shores are much indented and offer numerous landings and harbors, of which the most important are those of Laurium, Thoricus, and Sunium. The first two of these are well-sheltered harbors, the first of them in a high state of improvement, and both of them have railway communication with Athens, as well as direct steam-ship connections with Europe and America.

Geologically it is one of the most interesting regions in the world. The entire absence of fossils—not even a trace of one being authenticated after a careful search of twenty-five years extending to nearly every square meter of surface—as well as the extensive local action of metamorphism, renders geological determinations difficult and doubtful.

Generally speaking, the region consists of an alternation of mica-schists and marbles; but other rocks, partly eruptive, occur, *e. g.*, diorite, trachyte, eurite, and granite. An ideal section (as given by Mitsopoulos) shows the following stratification:

(1) Upper iron-bearing marble (Sunium and elsewhere), forming many hill-tops.

(2) Upper clay mica-schist, partly decomposed, showing white mica.

(3) Middle marble, with irregularly ordered ore masses. (Between 2 and 3 lies first contact vein, carrying mainly iron ores impregnated with galena and cerusite.)

(4) Lower mica (Camaresa and elsewhere), 20 to 25 meters in thickness. (Between 3 and 4, second contact, carrying, in the north of the district, manganese iron ores, and, in the south, siderite, calcite, fluorite, and fine-grained argentiferous galena.)

(5) Secondary marble stratum, 25 to 30 meters thick, impregnated with sulphur pyrites and galena. (Between 4 and 5, secondary contact.)

(6) Secondary mica-schist, 5 to 7 meters thick.

(7) Saccharvid marble of unknown* thickness, largely worked out by the ancients, but still abounding in nests and blocks of zinc spar. (Between 6 and 7 lies third contact, half a meter to 12 meters thick, consisting of galena and cerusite.)

The minerals of chief commercial importance occurring at Laurium are zinc, lead, and manganese.

Zinc is represented mainly by calamine, or, more accurately, by smithsonite, which is found in nearly all marble and mica-schists. It occurs in the most varied forms: sometimes in crystalline, mammillated masses, very fine, white, translucent, pearl gray, greenish, bluish, or with a reddish-brown coating; sometimes in stalactite masses and mixed with iron oxide; sometimes in the form of translucent pearls of a very beautiful green—probably the “emeralds of Laurium” mentioned by ancient authors. Zinc-blende also occurs in very great quantities associated with galena, from which it can be separated only by grinding to fine sand. Although lying on the surface and known to the ancients, the zinc ores attracted little attention at Laurium until twenty years ago; now they are its most important product.

Lead is represented by two principal species—galena and cerusite. Galena rarely occurs in large masses, but rather in pockets (*roggons*) never exceeding 0.20 m. cube. It is usually mixed with blende alone, or with blende and iron pyrites; always argentiferous, the silver averaging from 1½ to 4 kilograms to the ton of lead; also, with a small proportion of gold, estimated at 10 per cent. of the silver contained. Among the impurities are arsenic and antimony. Cerusite (white lead) occurs ordinarily in earthy form, colored more or less by iron oxides, but found, also, in lead-bearing iron ores. Generally it contains less silver than the galena, probably because in the decomposition of galena (the supposed origin of cerusite) the silver has been liberated in very fine powder and washed away.

Manganese is present in all the iron ores in a variable proportion, reaching as high as 12 to 14 per cent. The varieties of color and texture are very numerous. The manganese ores of Laurium and Seriphus already constitute a considerable industry and are used in making Bessemer steel.

These are only the chief commercial ores. The variety of mineral species occurring at Laurium, as well as their beauty, can hardly be indicated here. But the collection of M. Cordella, the chief authority on the subject, contains 430 distinct specimens, and the cabinet of the university has a collection of Laurium minerals numbering a thousand specimens.†

Treatment of ancient slag and refuse by the Hellenic company.—In 1860, after seventeen centuries of neglect, Laurium entered upon a new era of exploitation. A French company obtained concessions and began to clean up after the ancient exploiters by applying more perfect processes to the

* This has been explored down to sea-level without reaching its limit; it appears to rest on granite.

† Among others, Mitsopoulos enumerates hematite, iron spar, copper, cyprite, copper pyrites, iron pyrites, malachite, azurite, ocher, pyrolusite, symplectite, adamine, annabergite, serpierite, allophane, buratite, euchroite, phosgenite, atacamite, vanadinite, mispickite, rhodochrosite, scorodite, alloisite, quartz, baryta, calc-spar and stalactite, aragonite, disthene, gypsum, hisingerite, anthraconite, oligonite, and amiant.

slag and refuse they had left upon the surface still rich in metal. The ancients, mining chiefly for silver, left the lead ores largely, and the zinc ores quite, intact. The moderns mine chiefly for lead and zinc, and silver is only a secondary product. The French company was soon gleaning annually from this ancient waste 8,000 to 10,000 tons of lead containing 12 to 22 ounces of silver to the ton, and its successor (the Hellenic Mining Company, of Laurium) has since maintained about the same average. Though in the nature of things this surface industry is limited in extent and declining in importance, it is a subject of great historical, as it may become one of great practical, interest for other mining countries. Some account of it must therefore be given. The matters operated upon are known as *ecbolades* and *scoriæ*. The *ecbolades* are the ores rejected before smelting by the ancient operators. To lessen the burden of bareback transportation from the bowels of the earth, the ores were first sorted in the mine and only the richer were carried out. Then, at the surface, on resorting and washing, still more were rejected, thus forming surface heaps all over Laurium. Hence the classification into interior and exterior *ecbolades*, of which the latter, with the ancient *scoriæ*, constitute the original concession of the Hellenic company, while the former naturally go with the concession of the mines in which they are found, *i. e.*, chiefly to the French company.

Most of the *ecbolades* contained an average of 5 to 6 per cent. of lead, but some specimens have assayed as much as 17 to 18 per cent., these probably dating from a very early and imperfect stage of mining development. The Hellenic Government's commission for fixing the value of this surface concession estimated the quantity of *ecbolades* lying on the surface of Laurium at 60,000,000 tons, but they are nearly exhausted now. A year ago M. Cordella, in his report, estimated the residue belonging to his company at 3,500,000 tons containing 3 to 6 per cent. of lead and 1,200 to 4,000 grams of silver to the ton of lead. They are first roughly sifted on the spot and then transported to the washer at Ergasteria (Laurium), where they were formerly enriched to an average of 18 per cent. of lead, which has now fallen to 10 to 10½ per cent., as the richer *ecbolades* are exhausted.

The interior *ecbolades*, having been subjected neither to grinding nor washing, nor in any great measure to the action of the elements, represent, accurately enough, the lower grades of ores worked by the ancients. Though less rich in lead, they are richer in silver than the exterior.

The *scoriæ*, or slag, from the ancient smelters were already undergoing a second smelting in Strabo's time (first century of our era), but considerable still remained when the present exploitation began. Two years ago Professor Mitsopoulos estimated the residue at 2,250,000 tons containing 2 to 10 per cent. of lead and 1,000 to 2,000 grams of silver to the ton of lead. This is now said to be pretty well exhausted, but very rich *scoriæ* are still obtained by dredging the adjacent sea. In two years and a half (1888) about 100,000 tons of this has been taken out at a cost of 7 drachmas per ton, and one contractor is now delivering it to the Hellenic company at the rate of 1,000 tons per month.

The typical composition per ton of the ancient scorix and exterior ecbolades is shown by the following analysis:*

Description.	Scorix.	Ecbolades.
	<i>Per cent.</i>	<i>Per cent.</i>
Silicic acid.....	30.45	37.40
Aluminum.....	4.82	3.40
Chalk.....	19.49	16.30
Magnesia.....	2.21	1.20
Ferrous oxide.....	15.45	1.10
Ferric oxide.....	1.85	9.40
Oxide of manganese.....	0.93	.....
Oxide of lead.....	11.50	5.50
Oxide of zinc.....	6.22	3.67
Arsenic acid.....	1.20	3.45
Antimony acid.....	0.80	0.80
Oxide of copper.....	0.66	0.45
Sulphuric acid.....	1.10	2.90
Phosphoric acid.....	0.45	0.05
Potash.....	2.17	.....
Water.....	.....	9.97
Carbonic acid.....	.....	4.20
Fluor.....	.....	(*)
Silver.....	(†)	(‡)

* Traces.

† 50 grams.

‡ 50 to 90 grams.

This analysis shows the typical composition; but the scorix smelted at Ergasteria vary greatly in richness of lead—the poorer being the result of re-smelting early in our era, the richer of the original ancient smelting. Of the latter are the scorix obtained by dredging Vrysaki Bay, adjoining Thoricus, their richness testifying to the imperfection of the ancient process. The ecbolades, also, vary widely, as has been shown.

It remains to speak of the treatment of these materials by the Hellenic Mining Company, of Laurium, to whom this surface concession belongs.

For the preparation of the ecbolades the company have extensive works at Ergasteria, the water being pumped up from the sea into an elevated basin containing 1,100 cubic meters. To these works the ecbolades are brought by the company's railway, and here they are classified and washed. The great washer is lighted by electricity, and contains 42 drums, 350 jiggers, 72 *Spitzkasten*, and 8 *Rundherde*. It employs about 300 men at 2½ to 3 drachmas per day and every twenty-four hours washes 1,000 tons of ecbolades (containing 3 to 5 per cent. of lead and 1,200 to 1,700 grams of silver to the ton of lead), which yield for the smelter 300 tons averaging 10 to 10½ per cent. of lead. Of these products, about one-third (100 to 120 tons) is slime, or sediment, containing only 6 to 9 per cent. of lead. This is made into bricks and sun dried before it goes to the smelter.

The smelting process first introduced was very wasteful, nearly half the lead being lost; but about twelve years ago the Pilz furnace, with certain modifications, was substituted for the old Spanish *Herdöfen*. Fourteen of these are now in use. In the year 1888 the smelter treated 130,901 tons

* Cambresy, Le Laurium, p. 136.

of minerals, producing 10,469 tons of argentiferous lead, valued at 4,808,753 drachmas, at a total expenditure of 3,867,299 drachmas, leaving a net profit of 941,154 drachmas. In the three years 1886-'88 the cost of raw material advanced from 177 drachmas to 203 drachmas per ton, while the cost of smelting was reduced from 182 drachmas to 137 drachmas.

The following table shows the composition of the smelting bed (*lit de fusion*) and the annual distribution of ores and fluxes:

Composition.	Percentage of 130,000 tons.	Quantity.
	<i>Per cent.</i>	<i>Tons.</i>
Ancient scorix.....	20	26,000
Grenaille and sand from washing.....	12	15,600
Bricks of slime mixed with "lead smoke".....	30.5	39,650
Galena.....	1.5	1,950
New iron-bearing scorix, as flux.....	25	19,500
Manganese and lead-bearing iron ore.....	21	27,300
Total.....	100	130,000

From this it appears that 46,800 tons of ferruginous fluxes were used in smelting 83,200 tons of proper lead-bearing ores. Smelting annually about 130,000 tons with an average richness in lead of less than 10 per cent., the works produce only 10,000 to 10,500 tons of lead containing 1,100 to 1,500 grams of silver per ton, and this at a total cost of 3,367,299 drachmas. These results are far from satisfactory to the distinguished director-general, M. Cordella, who, after a long tour of observation in Germany, has submitted plans for improving and enlarging the works and facilities of his company at an outlay of 2,000,000 drachmas, and these plans have been adopted and are about to be undertaken.

These improvements promise not only a great reduction in the cost of smelting, but also the profitable treatment of low-grade stuff now useless. By a better process of ore dressing, it is claimed, the 130,000 tons now going annually to the smelter may be reduced to 30,000 or 40,000 tons, with an average richness of 40 to 50 per cent. of lead, at an annual net saving of 1,000,000 drachmas; and the utilization of low-grade ores by better processes may give a new lease of life to the industry of Laurium. The ancient scorix may be replaced in large part by the modern slag, which still contains 4 to 4½ per cent. of lead and is found in considerable quantities near the works.

Until quite recently all the Laurium lead was sent abroad to be desilverized, but the Hellenic company have now established small works in connection with their smelter, where they are preparing from 500 to 1,000 tons of lead annually for use in Greece by the few manufactories of shot and pipe now existing here.

In addition to the concession of this ancient surface waste, the Hellenic company has acquired lead and iron mining properties in Greece, Macedonia, and Asia Minor, which insures its perpetuity after this is exhausted.

Its mines in the Laurium region are two, viz :

(1) The Nicias Mine, in the northeastern part of the district, with rich veins of manganese iron ore and argentiferous galena. The annual output is 50,000 tons of manganese (30 per cent. of iron and 18 to 20 per cent. of manganese), 15,000 tons of ferruginous lead ores (4 to 6 per cent. of lead with 1,800 to 2,000 grams of silver to the lead ton), and 500 tons of galena with 2,000 grams of silver each.

(2) The Lauriotic Olympus, producing annually 9,000 tons of lead-bearing iron ore with 6 to 8 per cent. of lead and 800 to 1,000 grams of silver to the lead ton. This is used for smelting ecbolades.

The official reports of the company for the past five years give the following figures of production of lead :

Year.	Quantity.	Quantity of silver per ton.	Cost of production per ton.
	<i>Tons.</i>	<i>Grams.</i>	<i>Drachmas.</i>
1886.....	9,371	1,319	380. 71
1887.....	9,750	1,321	369. 53
1888.....	10,451	1,305	370. 00
1889.....	9,422	1,467	387. 00
1890 (to July).....	4,333		407. 00

The increased proportion of silver not only offsets the increase in cost of production, but leaves a margin for profit.

This company owns the narrow-gauge railway from Athens to Laurium, with branch line to Cephissia (about 46 miles in all), and about 12 miles of narrow-gauge railway for carrying minerals to its works. In its service at Laurium it employs some 1,700 men. These have an organized relief fund based on a reserve of 1 per cent. of wages, while the company charges itself with the maintenance of a hospital, physicians, and pharmacist at an expense of about 1,300 drachmas per month.

Operations of the French company in the extraction and treatment of new ores.—Mining proper in this region is largely in the hands of the French Mining Company, of Laurium. This company was formed at Paris in 1875 with a capital of 16,300,000 francs in 32,600 shares of 500 francs each. It owns the entire central area of Laurium (54,000 acres) and employs 2,200 to 2,500 men. Its main business is the mining of rich zinc ores, which it calcines and then ships to Belgium, owing to the great cost of making spelter here; but it also mines a considerable quantity of lead and manganese.

This company has entered into the labors of its ancient predecessors; it had only to find their shafts and clear out their galleries to have a mine in full swing. Great masses of ore mined twenty to twenty-four centuries ago (the interior ecbolades) lay ready to be carried to the surface, and the old galleries lighted the way to new discovery.

The Camaresa mine has now a depth of some 600 feet, and its galleries aggregate some 50 miles in length. Two-thirds of this distance is provided

with a narrow (20-inch) railway for carrying out the ore. A single horse draws a train of half a dozen or more "iron dogs" carrying 1 to 1½ tons each—a very different matter from the bareback transportation of the ancient times. The circulation of air is almost as free as above ground, and there is little damp. This mine employs 900 men, 600 of them under-ground, and yields monthly 3,500 to 7,000 tons of raw calamine, 2,500 to 3,000 tons of lead ore, and 2,000 tons of mixed ores.

The outlying mines, less developed, employ 800 men and are worked chiefly for manganese, some of which finds its way to the United States.

Of the calamine taken out at Camaresa, a part is calcined on the spot by a battery of six keeve and two reverberatory furnaces, but the company's main works are at Cypriano, adjoining Laurium. The works are connected with Camaresa (a distance of 6 miles) and the outlying mines by a little railway, which brings down all the ore produced—calamine (calcined or raw), lead, etc.

The works at Cypriano comprise:

(1) Reduction works similar to those of the Hellenic company for enriching mineral oxides and separating mixed minerals (325 workmen).

(2) The smelter with nine large keeve furnaces (240 men), treating mainly low-grade lead ores (8 to 12 per cent.), as it is found advantageous to send the high-grade ores to European works. The minerals treated here being calcareous, the fluxes used are siliceous—contrary to the practice at Ergasteria.

(3) Calcining works, employing 40 men and producing annually 30,000 to 40,000 tons of calcined ore containing about 55 per cent. of zinc.

There are also machine-shops, forges, testing laboratory, store-houses, offices, workmen's cottages—even a Roman Catholic church, as many of the laborers are Italian; and the company has its own wharf with every facility for rapid lading, storage, etc.

The operations of this company, as gathered from their reports for the years 1886-'89, may be exhibited as follows:

Year.	Quantity of lead produced.	Quantity of ores prepared for export.*	Capital invested.	Annual dividend.	Dividend per share.†
	<i>Tons.</i>	<i>Tons.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
1886.....	2,981	49,991	21,414,484	1,171,758	32.50
1887.....	2,778	59,488	21,700,976	1,171,758	32.50
1888.....	4,784	59,011	22,308,245	1,276,380	35.00
1889.....	5,074	49,394	21,546,504	1,276,380	35.00

* Calcined zinc ores mainly, but including a limited quantity of high-grade galena. The production of calcined calamine averages from 30,000 to 40,000 tons a year.

† On 500-franc shares.

The employes of this company number 2,200 to 2,500, and, as in the case of the Hellenic company, form an association for relief in case of illness or accident. The relief fund is based on a reserve of 17 per cent. of

wages for single men and 2 per cent. for married men, and the company provides a hospital and lodgings for attendants. The directory is selected from employes of two years' service, with the company's director as chairman. The administration of relief seems humane and wise.

Beside the two important companies whose operations have been given at some length, there are others doing a less considerable business. Mr. Desposito, the vice-consul for Great Britain and Austria at Laurium, is working a very rich zinc mine near Sunium, which now yields 400 tons of calamine per month. This calamine, when calcined, contains 68 per cent. of zinc and is readily sold to an Antwerp house at 240 francs per ton. Mr. Desposito is also mining manganese in the Daskalio district and making shipments to Philadelphia.

Mineral wealth of the Kingdom outside of Laurium.—While this report concerns, primarily, the mines of Laurium, there must be added a brief account of the mineral wealth of the Kingdom at large.

The principal products not already mentioned are magnesite, asbestos, sulphur, emery, and marble.

Magnesite of excellent quality occurs abundantly in Eubœa, as also in Phthiotis, about Corinth, and on the island of Spetsæ. The annual production of Eubœa is given at 7,000 tons, worth 22 francs per ton.

Asbestos occurs also in Eubœa (where Strabo had noted it) and in the neighboring islands, as well as in the near vicinity of Athens; but no mines have yet been opened.

Sulphur occurs in very rich mines on the volcanic island of Milo. The beds, sometimes 20 meters in thickness, consist of decomposed trachyte impregnated with 32 per cent. of sulphur. In spite of wasteful processes, 1,500 to 2,000 tons are produced annually, all of which is sold in Greece to the vine-growers at 125 drachmas per ton.

Emery is found in the Cyclades generally, and the island of Naxos is especially famous for it. The State owns the mines, which it leased for twelve years (1878-'89), the lessee being required to export annually 40,000 cwts. and to pay into the treasury 12.20 drachmas per cwt., or 488,000 drachmas per annum, for the concession.

Greece is the land of marble *par excellence*. So far seventy-two varieties of color and structure are noted. Pentelic and Parian are known the world over, but some of the most exquisite marbles are found in obscure islets and still unknown abroad. For sculpture, those of the little island of Skyros are regarded by connoisseurs as the best in Greece and equal to Carrara. Of marbles for building, walling, and paving there seems no limit, either in abundance or variety, and often they can be quarried on the spot where they are needed. The ancient sea-wall of the Peiraï peninsula—much of it as perfect to-day as when the stones were laid—was built up almost out of the rock on which it stands; and so was the Temple of Athena, at Sunium, and the theater and other constructions at Thoricus. It is to the superb quality of the material, as well as to the benignity of climate, that the world owes the marvelous preservation of the Parthenon, the Propylæa, and the Theseum, at Athens.

COMMERCE OF GREECE IN MINE PRODUCTS.

The following tables, carefully compiled from the reports of the Government bureau of commerce present a clear view of Greek trade in mine products generally, and particularly in lead and zinc:

1. Table showing imports of minerals and metals for 1889.

Description.	Quantity.	Value.	Duties paid.	Whence imported.
<i>Raw.</i>	<i>Okes.</i>	<i>Drachmas.</i>	<i>Drachmas.</i>	
Lead.....	85,460	34,184	9,827	France (three-fifths), England, Italy, Austria.
Zinc.....	84,383	42,196	9,069	England and Belgium (seven-eighths), France, Austria.
Iron.....	5,883,853	891,415	1,115	England (six-sevenths), Belgium (one-ninth).
Steel.....	285,690	399,996	1,957	England (two-thirds), Austria one-fourth.
Tin.....	44,891	118,311	10,323	England.
Copper.....	126,664	243,994	54,685	England (eleven-twelfths), France, Austria, Belgium, Turkey.
Bronze.....	8,171	16,342	2,818	England (seven-eighths), Austria, Germany, France.
Silver.....	83	12,450	.....	Germany (eleven-twelfths), Austria.
Coal.....	100,938,735	5,046,936	(*)	England (ninety-nine one-hundredths), Belgium.
Sulphur.....	7,187,554	472,653	.....	Italy.
Petroleum.....	†194,000	1,666,520	.....	United States.
Mineral waters.....	59,456	29,728	12,554	Turkey (three-fifths), Austria (one-fourth), Italy, Germany, England.
Miscellaneous.....	5,712,154	228,486	61,439	Turkey, England, France, Italy.
<i>Manufactured.</i>				
Lead.....	274,657	425,717	61,426	France and Austria (three-fourths), Italy, England, Germany.
Zinc.....	14,639	43,195	4,578	England (three-sevenths), Belgium, Austria, Germany.
Iron:				
Simple manufactures.	6,550,567	5,109,422	323,583	England, Holland, and Austria (five-sixths), France, Belgium, Germany.
Motors and pumps...	‡3,382,031	719,399	5,379	Germany and England (three-fourths), France, Holland, Austria, Italy, Turkey, United States (1,370 francs).
Domestic machines...	88,169	222,867	5,739	Germany, Austria, France, United States (437 machines, 30,590 francs), England, Belgium.
Steel.....	55,534	316,543	29,557	England, France, Germany, Austria.
Tin.....	6,008	39,052	3,642	Germany and Austria (two-thirds), France, England.
Copper.....	13,435	61,128	3,198	England (two-thirds), Austria, Turkey.
Bronze.....	36,526	438,312	51,204	France, Germany, England, Austria.
Silver.....	196,330	62,214	11,655	Germany (one-half), Austria, France, England.
Gold or platinum.....	‡3,816	130,998	10,954	Germany, England, Austria, France.
Miscellaneous.....	‡99,877	43,649	5,086	Do.
Alloys.....	6,998	36,738	80,477	Austria, France, Germany, England.

* Free.

† Cases.

‡ 1,741 pieces.

‡ 2,876 pieces.

‡ Drachmas (1 drachma=15.432 grains).

‡ 4,138 pieces.

2. Table showing exports of minerals and metals for 1889.

Description.	Quantity.	Value.	Destination.
<i>Raw.</i>			
Lead.....tons...	13,394	7,640,724	England (two-thirds), France (one-fourth), Italy, Belgium.
Galena.....do.....	1,630	736,770	Belgium.
Zinc:			
Calamine.....do.....	27,155	4,670,000	Belgium (two-thirds), France (one-fifth), England.
Blende.....do.....	15,219	2,384,164	Belgium.
Manganese.....do.....	111,862	1,789,792	England (two-thirds), Holland, Belgium, United States.
Pouzzolane.....do.....	47,000	373,838	Turkey.
Emery.....quintals...	31,716	380,592	England.
Gypsum.....do.....	182	1,638	Italy.
Marbles.....cubic meters...	1,544	200,720	Turkey.
Millstones.....pieces...	6,400	224,000	Do.
Naphtha.....okes...	31,900	28,719	Do.
Miscellaneous.....tons...	47,159	369,588	Turkey, Belgium, England.
<i>Manufactured.</i>			
Marbles.....cubic meters...	72	18,000	Turkey (five-sixths), Russia.
Machines.....okes...	11,757	11,757	Turkey.
Silver coin:			
Greek.....pieces...	2,838	2,400	Austria, France, England, Italy.
All countries.....do.....	49,820	238,332	France, Turkey, Austria, Egypt, England.
Gold (all countries).....do.....	217,165	4,916,426	Turkey, France, Austria, Egypt, Roumania.
Miscellaneous metals.....okes...	84,613	259,239	Turkey.

3. Table showing exports and imports of lead and zinc for the first eight months of 1890 as compared with the year 1889.

EXPORTS.

Mineral.	1890.*		1889.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	Drachmas.	Tons.	Drachmas.
Lead	9,049	4,903,566	13,394	7,640,724
Galena.....	1,770	800,240	1,630	736,770
Zinc:				
Calamine	27,650	3,551,800	27,155	4,670,000
Blende.....	1,950	304,200	15,219	2,384,164

IMPORTS.

	1890.*		1889.	
	Quantity.	Value.	Quantity.	Value.
Lead:				
Raw.....	47,184	19,002	85,460	34,184
Manufactures	70,390	43,748	274,657	425,714
Zinc:				
Raw.....	42,672	21,331	84,383	42,196
Manufactures	1,936	8,316	14,639	73,125

* To September 1.

4. Table showing origin of lead and zinc imports for 1889.

Countries.	Raw.		Manufactured.	
	Quantity.	Value.	Quantity.	Value.
Lead :	<i>Okes.</i>	<i>Drachmas.</i>	<i>Okes.</i>	<i>Drachmas.</i>
France.....	56,773	22,709	109,822	170,224
Austria.....	4,118	1,648	106,633	165,327
England.....	18,195	7,278	13,338	20,624
Italy.....	6,374	2,549	28,594	44,321
Germany.....			11,533	17,907
Turkey.....			3,284	5,090
Belgium.....			1,703	2,174
Zinc :				
England.....	39,229	19,616	6,275	31,375
Belgium.....	33,930	16,965	3,790	18,950
France.....	6,999	3,500	649	3,245
Austria.....	3,381	1,690	2,217	11,085
Germany.....	454	227	1,639	8,195
Italy.....	395	198	69	345

5. Table showing the destination of lead and zinc exports for 1889.

Minerals.	England.	France.	Italy.	Belgium.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Lead.....	8,732	3,001	1,678	583
Calamine.....	3,372	5,780		18,003
Calena.....				1,630
Blende.....				15,219

6. Table showing the balance of trade in mineral products for 1888 and 1889.

Description.	1888.	1889.
	<i>Drachmas.</i>	<i>Drachmas.</i>
Total value of imports.....	12,673,020	17,335,645
Total value of exports.....	11,888,805	16,393,729
Adverse balance of trade in mineral products.....	784,215	941,916

7. Table showing customs duties on lead and zinc imports into Greece.

Minerals.	Duty.
Lead and manufactures of lead :	
Lead type and printers' ornaments.....	Free.
Lead mixed with other metals, in pigs, bars, and sheets.....	10 lepta per oke.
Tubes, plates, and sheeting for roofs.....	15 lepta per oke.
Balls, bullets, and shot.....	20 lepta per oke.
Fancy articles and toys.....	5 drachmas per oke.
Zinc and manufactures of zinc :	
Zinc in plates, combined with other metals, for ship-building, also nails, screws, etc.....	Free.
Zinc mixed, calcined calamine, raw zinc in pigs, lumps, or sheets, with alloy....	10 lepta per oke.
Simple articles in coarse work, also buttons of zinc or alloy with zinc predominating.....	40 lepta per oke.
Simple articles of fine work, including buttons, simple, plated, or enameled, or mixed with more valuable metals....	1 lepta per oke.

While the balance of trade in total mineral products is against Greece (Table 6), it is shown by Table 3 that for the first eight months of the present year she has exported about a hundred times as much lead and zinc (in value) as she has imported. For the preceding year (Tables 1 and 2) the value of the lead export was only about twenty-five, and of the zinc export about sixty, times that of the corresponding imports. The great difference as regards lead is attributable to the establishment of desilverizing works at Laurium.

SUMMARY.

Some of the results of this study may now be summed up in the form of answers to the Department's inquiries:

(1) The general depth of lead and zinc mining in this country is greater than in the past, but no exact figures can be given.

(2) Lead ores (new) contain about 9 per cent. of lead and 1,800 grams of silver to the lead ton; ecbolades, 3 to 6 per cent. of lead and 1,200 to 4,000 grams of silver to the lead ton; zinc ores, 40 to 50 per cent. raw and 55 to 68 per cent. calcined.

(3) The average percentage of lead obtained by smelting (as reported by the French company) is 8 per cent.

(4) The Pilz process is used in smelting lead ores.

(5) No spelter is made in Greece. Zinc ores are calcined here and shipped to Belgium, France, and England for further treatment.

(6) I can get no satisfactory information as to the value of ore per ton at the mines.

(7) There is a large surplus production of lead and zinc ores (see table of imports and exports above), which is exported to England, Belgium, France, and Italy. (See Table 5.)

(8) The production of new ores is increasing, though the aggregate industry is about stationary, owing to the exhaustion of the ancient refuse.

(9) The wages of miners vary from 3 to 4.20 drachmas per day—say, at present value of currency, 48 to 67 cents.

(10) Since recent introduction of desilverizing process at Laurium, a considerable part of the lead consumed in Greece is of purely domestic origin, but much of the finished lead and all the zinc are still imported (see Table 3 above): raw lead, in pigs, bars, plates, and sheets; manufactured lead, in type, pipe, shot, etc.; raw zinc, in pigs and sheets; manufactured zinc, in nails, pins, screws, and buttons of alloy in which zinc predominates.

(11) So far as known, none of the raw or manufactured lead and zinc consumed in this district is of American origin. The origin of lead and zinc imported into Greece in 1889 is shown in Table 4. This table indicates at a glance what competition our producers must deal with if they are to find a market in Greece, as well as the nature of the market for raw and manufactured stuff. It shows that the imports of lead manufactures stand to those of raw lead in a ratio of $3\frac{1}{4}$ to 1 in weight and about $12\frac{1}{2}$ to 1 in value. As the facilities for desilverizing improve, the importation of raw lead will practically cease.

The only way to a market for our lead in Greece must be sought in supplying manufactured articles which shall compete in price and utility with those now imported from Europe. Cheap ocean freights and manufactures, valuable for workmanship rather than weight are essential to successful competition over so great a distance. The zinc market is still open to the world for both raw and manufactured metal; but it is not an important market, and probably Greece will have mastered the difficulties in the way of working her own ores before American products could fairly get a foot-hold in the country.

THE FUTURE OF THE MINING INDUSTRY IN GREECE.

Mining and metallurgy in Greece are at a great disadvantage in certain respects, but with some countervailing advantages. In the first place, the developed mineral area is small and its wealth far from intact. Yet there seem to be sufficient ores still left at Laurium to guaranty the continuance of a moderately profitable industry for many years to come if only capital, enterprise, and skill unite in utilizing the best methods of mining and metallurgy. This the leading companies seem determined to have done, as the great improvements now projected or in progress bear witness. Their aim is to establish works and introduce processes which shall make Laurium the center of metallurgical operations for the Levant, even after the exhaustion of its own mines. To this end they possess and are acquiring important mining properties in Macedonia and Asia Minor.

A further disadvantage, and most serious, is the total absence of coal in Greece. Lignite, indeed, is found at Oropus and elsewhere, and is laid down at Laurium for 19 drachmas per ton for the French company's furnaces; but Laurium had to import from England last year additional fuel to the value of nearly \$500,000, viz, 18,351 tons of coal, 33,195 tons of coke, and 3,989 tons of patent fuel. While the facilities for ore dressing are exceptionally good, both from the lay of the land and the vicinity of the sea, smelting must remain a comparatively expensive process until cheap fuel is obtained or a substitute found.

On the other hand, there are distinct advantages as regards transportation and labor. With railway connection inland and the best of harbors immediately at hand, transportation facilities are abundant. The Greeks are historically a sea-faring people, and they now have a long lead in the carrying trade of their own country and are second only to the English in that of the Levant at large.

Labor, too, is cheap and docile. At first it was difficult to obtain native labor sufficiently skilled, and nearly all the work was done by Italians. Now, however, the Hellenic company boasts that it employs Greeks almost exclusively, even in its more responsible positions. These Greek miners, on 50 to 60 cents a day, not only live, but lay up money; and the social arrangements of the companies seem to be humane and wise, guarantying the care and comfort of the men in case of sickness or other disability incurred in their service. The modern labor question has not yet struck Laurium, the last strike on

record being probably that of the twenty thousand slaves who flocked to Deceleia during the Spartan occupation in the closing period of the Peloponnesian war. The free Greek now probably costs less, all things considered, than the slave who delved in these mines in the age of Pericles, besides being a less uncertain quantity.

IRVING J. MANATT,
Consul.

UNITED STATES CONSULATE,
Athens, November 20, 1890.

CONSIGNMENT SHIPMENTS TO CANADA.

TRANSMITTED BY CONSUL-GENERAL LAY, OF OTTAWA.

GOVERNMENT HOUSE AT OTTAWA,
Thursday, December 11, 1890.

Present: His Excellency the governor-general in council.

His Excellency, in virtue of the powers vested in him by section 252 of "the customs act," chapter 32 of the revised statutes, and by and with the advice of the Queen's privy council for Canada, is pleased to order that the form of declaration to be made by the foreign owner of any goods shipped to Canada on consignment, being form 6 prescribed by the order in council of the 25th day of July, 1888, chapter 14 of the consolidated orders in council of Canada, prescribing forms of oath required under the above-cited act, as well as the like form of declaration prescribed by the order in council of the 19th of May, 1881, shall be, and the same are hereby, canceled and the following substituted in lieu thereof.

FORM 6.

Declaration to be made by the foreign owner of any goods shipped to Canada on consignment before the collector or the mayor or other chief municipal officer at the place in the United Kingdom, or other place in Her Majesty's possessions abroad, from whence the goods are shipped, or before a notary public, and at any other place before a British consul; or, if there is no British consul, then before a foreign consul at such place. (*Vide* section 152 customs act, chapter 32 revised statutes.)

I, ———, of ———, do solemnly and truly declare that I am (a member of the firm of ———, giving the name when not the individual owner) the owner of the goods shipped on consignment to (name of consignee), at ———, in Canada, and described in the annexed invoice; that the said invoice contains a full and true statement of the fair market value, when sold for home consumption, of the said goods at the time and place of the exportation thereof direct to Canada; that such fair market value includes any bounties, drawbacks, royalties, rents, or charges that may have been or are expected to be allowed or paid on the said goods, or is payable on patent-rights or because of the lease of such goods, or for the right of using the same, and that no different invoice on account thereof has been or will be furnished to any one by me or on my behalf.

Signed and declared before me at ———, this ——— day of ———, 189—.

JOHN J. MCGEE,
Clerk Privy Council.

THE ARGENTINE REPUBLIC IN 1890.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

The history of the Argentine Republic shows few sadder pages than that which marks the events of the year just closing. Not only has the country been struggling in the throes of commercial depression and financial ruin, but it has endured the national scandal of political revolution and civil bloodshed. To calm the excitement of the people, the late President undertook at first to call the situation "a crisis of progress;" but, in view of the distress and demoralization which have characterized both foreign and domestic trade, of the colossal fortunes which have crumbled under the consuming curse of fatal financial mismanagement, and of the sad straits to which the Government itself has been reduced to meet the service of the public debt, the year has certainly been one of humiliating reverses. In my last report I referred to the mad spirit of speculation which was rampant in the land; to the exaggerated prices of real estate, which went the higher as higher went the premium on gold; to national banks with hundreds of millions of circulation beyond their ability to redeem; to the thousands of mushroom joint-stock companies with millions of capital on paper, which, in the midst of the general inflation, blossomed out all over the country; to the increased importations of all manner of luxuries and unproductive articles to meet the tastes of the suddenly grown rich; to the wild overtrading on long credits in every branch of trade and commerce—and now the collapse has come, and come with a vengeance. Lands unsalable at any price, national banks gutted and left without a cent in their strong boxes, stock companies with fraudulent entries in their records and without any thing to show for the pretensions they set up, merchants unable to meet their liabilities in bank, notes protested and extensions granted, the general business at a stand-still, the banks hesitating to discount, and nobody able to say whom it is safe to trust—such is the picture which the country presents, to-day.

THE REVOLUTION IN BUENOS AYRES.

But, beyond this, political confidence gradually went down to the lowest possible ebb, and the Government of President Celman, which had done, or permitted to be done, all these enormities, at last became unbearable. Open condemnation of the authorities and secret plottings of revolution—when every one supposed that the days of revolution were over forever in this country—were everywhere rife. Both army and navy were demoralized, and the citizens of the capital woke up on the morning of the 25th of July to find that the national arsenal and armory were in the hands of the insurgents. The leaders issued proclamations calling on their countrymen to put down the Celman Government, at the same time setting up a provisional one in its place. On the other hand, the President declared the country in a

state of siege, and his adherents—many, indeed, who condemned him, but were opposed to revolutionary measures—resolutely stood by the Government troops. A general battle was waged through the streets of Buenos Ayres, and the fleet from the inner roads bombarded the city during the next three days. Many hundreds were killed, and many more were wounded; but the national authorities were too strong in resources for the illy directed mob, and finally a capitulation, with amnesty to all, was agreed upon. But the popular movement, although defeated on the field, was successful in the result accomplished, for public opinion was so emphatically against President Celman that, deserted by his legal advisers and not being able to find reputable men to take the vacated places, he finally, on the 6th of August, sent a letter to the National Senate stating that “he sacrificed himself to the interests of the Republic.” He resigned the executive office, and on the 7th Vice-President Peligrini was sworn into office for the unexpired term amidst the general rejoicings of the people. The new incumbent is an able and well-meaning man, and he has formed a compromise cabinet from the best elements of both parties. He commands, generally, the popular approval. That confidence is expressed by a slight decline in the gold premium since he came into power and in the hope that the bottom of the financial abyss had been touched.

THE GENERAL COLLAPSE OF BUSINESS.

In the midst, however, of the business and commercial gloom which everywhere exists, it seems almost idle, at the present time, to undertake to point out in a consular report any glimpse of light, much less of sunshine, in the general outlook of the country or in the condition of industries which a year ago were so promising. I can only say that “it is all here still,” but the boom “which then sent things spinning through the country,” which was opening up new agricultural centers on all sides, which was wiring in leagues upon leagues of outside pampa lands, which put an increased value on sheep and cattle and their product all through the interior, which was building new railways in every direction, which was spending money in a hundred different enterprises, and which made people here and abroad feel that the Argentine Republic was on the high road to a prosperous future—the “boom” has disappeared. Every business, every industry, every new enterprise feels and suffers from the tremendous reaction which has taken place. Everybody is confounded and stands aghast, looking at the stick which but yesterday, as it were, was a flaming rocket.

THE END OF LAND SPECULATIONS.

The effects of the crisis have been especially felt in the collapse of the innumerable land and colonization schemes for the opening up of the interior and the development of centers of population. With the “boom” in real estate everybody was “in the swim” to make money out of the public lands, and concessions of the most stupendous proportions and quite unlimited capital were granted by the Government and put afloat by the holders. There

is hardly one of the speculators who has not been caught by the ebb, and, in most cases, hopelessly stranded. The minister of the interior, who is trying to save to the Government what he can out of such wrecks, has just issued a decree annulling the whole brood in a batch. His action meets the general approval of the people. The Buenos Ayres Standard says:

All will applaud to the echo the Government decrees that seal the fate of a score of railway concessions and land colonization schemes, bubbles floating in the air for the last two or three years and wafted to-day into the waste-paper basket of the home minister. It seems only yesterday that the phenomenal rush for public lands took place; when official favoritism granted hundreds upon hundreds of leagues to speculators and others, who, in those moments of folly, thought that they had secured big prizes in the lottery of fortune; when the happy *concessionnaires* pledged on paper their good names and in the bank a fraction—a very small one in all cases—of their money to pay for their land grants in bills running over many years and to colonize at the rate of a fixed number of homesteads per square league. Some parties were mad enough to take up territories of several hundred leagues and to engage themselves in a promise to start on the lands thousands of families from certain quarters of the civilized globe. With the exception of a few, these land concessions at the time looked more like munificent gifts to favorites than sound business on the part of the Government. Thousands of applications were filed, and the parlor of the land office in the home ministry was quite as crowded as the lobbies of Congress once were with *concessionnaires* for public works.

Times have changed. To-day we see that the majority of the land *concessionnaires* have failed to sell their concessions or to carry out the stipulations of their contract. Hundreds who had merely bought the lands at auction, in business fashion, without any of the trammels and trials attending free grants on condition of colonization and improvement, find, to their astonishment, that the crisis has leveled every thing, price of land included, and that they can not continue paying the bills running on their purchases. The action of the Government to-day does not affect the purchasers of fiscal lands of the latter category, for the ordinary procedure takes place in case of non-payment—the unfortunate purchaser forfeits the land and his previous payments thereon. Where the action of the Government is sorely felt to-day is in all those cases where lands were given to certain parties for the familiar song, the melody of which still rings in our ears, with the promised influx of immigrants, the starting of thousands of families, the construction of dwellings, of canals, of railways, of sugar factories, and what not. It is in these quarters, where the stipulations accompanying the land grants have not been carried out to the letter, that the Government now steps in to annul all such concessions. And, we beg to repeat, all will applaud to the echo the reform thus radically begun by the home minister. Hundreds of leagues of splendid land will now return to fiscal ownership, while hundreds of *concessionnaires* will gnash their teeth that they did not avail of the golden opportunities offered during the booming days of 1888 and 1889 to sell their cheaply gotten claims on some of the fairest portions of the great territorial patrimony of the Argentine Republic.

IMMIGRATION.

The stream of immigration which during the last few years has been seeking the shores of the river Plate by hundreds of thousands has quite subsided. In 1887 the number of arrivals was 120,842; in 1888, 155,632; and in 1889 it reached 273,000; but that was the culmination of the wave. It met here a most lamentable state of affairs—business houses closing, workshops idle, river commerce almost suspended, all building operations stopped, a panic in every department of trade, wages of workmen reduced, operatives thrown out of employment, few opportunities offering for work in the interior. It was pitiable to see the hungry immigrants

thronging the streets and wharves in search of charity. That was at the close of 1889. Since then the situation, so far as working-men are concerned, has continued to grow worse; and during the last six months there has been a regular stampede among the newly arrived to get away from here. By every steamer outward bound hundreds and thousands have been retiring from the river Plate. Free passages were for a time offered by the Brazilian Government to those desiring to try their fortunes in that country, and this sent off many other thousands who had no means of their own to get away. The result has been that during the year just closed the number of departures from Buenos Ayres has almost kept pace with the number of arrivals. And, as the unpromising condition of affairs in this country becomes more fully understood throughout Europe, immigration must continue to grow less and less. In view of the situation, the Government has discontinued all its agencies and closed up its emigration offices abroad. Of course, this state of affairs must work a depressing effect upon all Argentine industries. The balance-sheet of immigration and emigration of the first nine months of 1890 is as follows:

	Number.
Immigration.....	115,168
Emigration.....	71,864
Balance remaining.....	33,304

AGRICULTURE.

But the industry which will feel it the most is probably that of agriculture, in this, that it will to some extent put a stop to the opening of new farms, if, indeed, it may not reduce the breadth of land which has already been planted in crops. Indeed, while the present prospects of the coming harvest are fair, there is already a fear that there will not be hands enough to gather it, thus imperiling a portion of the yield if bad weather should set in. This apprehension, however, may be exaggerated.

Of the crop of last season, while the yield of wheat was unusually small and the corn crop was unusually large, the total value of the crop was about the same as that of 1888. I give below the returns of the exports of the most important articles for 1889 and nine months of 1890:

Articles.	1889.	1890.
	Tons.	Tons.
Birdseed.....	1,110	148
Linseed.....	28,195	30,541
Corn.....	432,590	586,670
Baled hay.....	20,434	14,197
Wheat.....	22,806	319,256
Barley.....	321	1,117
Flour.....	3,360	10,746

Thus the shipments for only nine months of the present year are already far in excess of the total quantities exported in 1889.

RAILWAYS.

The operations in railway construction during the last year, owing to the difficulty of raising the necessary capital, have been very restricted. At the present time, I think, work is suspended on nearly all those which are under construction, while those which have been merely surveyed will probably not find persons willing to take the contracts of construction for years to come. As for all those on paper for which concessions have been granted to be floated in Europe—and their name is legion—it will be safe to say that they will remain *in statu quo* until Argentine enterprises once more have a good name abroad. Now that there is a halt, it is a good time to sum up what thus far has been done year by year in the way of railway building. I subjoin a table from an official source, which shows the progress from 1857, when the first mile was constructed, down to 1889, together with the amount expended :

Year.	Distance constructed.	Cost (in gold).
	<i>Kilometers.</i>	
1857.....	10	\$285,408
1858.....	18	450,300
1859.....	23	578,480
1860.....	39	785,030
1861.....	39	785,030
1862.....	47	1,117,536
1863.....	61	1,340,134
1864.....	94	1,747,700
1865.....	213	5,379,898
1866.....	514	12,170,450
1867.....	566	13,592,831
1868.....	572	13,863,964
1869.....	604	16,026,951
1870.....	732	18,835,703
1871.....	852	20,983,382
1872.....	965	23,950,480
1873.....	1,104	30,653,407
1874.....	1,249	38,090,350
1875.....	1,384	40,990,210
1876.....	1,665	44,924,321
1877.....	2,262	54,870,925
1878.....	2,262	54,870,925
1879.....	2,262	54,870,925
1880.....	2,313	58,343,981
1881.....	2,402	59,151,721
1882.....	2,666	61,962,005
1883.....	3,124	76,535,191
1884.....	3,728	80,036,932
1885.....	4,626	113,705,351
1886.....	5,960	129,035,338
1887.....	7,068	199,332,635
1888.....	7,255	220,746,247
1889.....	11,500	310,614,360

There are about 5,000 kilometers in addition to the above which are partly constructed and only require small additional work to complete them, but which have been stopped by the "hard times," thus making 16,500 kilometers in all.

Congress has emphatically refused to grant any new charters with Government guaranty, and has passed a law suspending all guaranties to railways which have not complied with the terms of their charters.

PUBLIC WORKS.

The Government has also, so far as it is possible, stopped all work upon public buildings, docks, wharfs, canals, etc., owing to the want of money for their further prosecution. The only public work of any importance which continues to be pushed is the port works of Buenos Ayres. The reason of this is that provision, by the sale of national bonds, was made for this enterprise before the country was caught in the crisis. During the last year the excavations have had a large force employed upon them, and the masonry has kept pace with the earth-works. The basin and docks No. 1 and No. 2 are complete and open for business. Dock No. 3 will be ready in a few more months, while the work upon the others is progressing satisfactorily. It will be a magnificent monument to the enterprise of the Government when the whole is complete.

MINES AND MINING.

There is nothing new to be said on this subject. Almost the same uncertainty continues to exist in reference to Argentine coal that has accompanied the vexed question from the beginning. While at different points in the interior we are continually hearing the cry of "eureka," it is not yet absolutely certain that it has been found. I saw some specimens recently brought from Nauqueen, but it seemed more like shale than coal. I could not induce it to ignite; yet, by going deeper, they may find the "black diamond" there. In Mendoza the reports of coal discoveries are pretty well substantiated, and parties there have claimed the \$25,000 reward which years ago was offered by the Government. No award, however, has yet been made, or at least paid. On this subject I find a communication in the Buenos Ayres Standard written by Dr. H. D. Horkold, who is the inspector-general of mines, and who was chairman of the committee appointed to make the award. He says:

The National Government passed a law in 1870 offering a premium of \$25,000 for the discovery of a coal-field having certain conditions indicated in the law, and there have been various applications from time to time for the award. The last was made in 1886, and in 1887 the Government issued a commission to consider the applications then pending. This commission consisted of five persons, *i. e.*, Dr. Don J. J. Kyle, director of assays in the Government mint and professor of chemistry in the university; Dr. Carlos Berg, professor of natural history in the university; Dr. Miguel Puigarrí, professor of chemistry; Dr. Gil, senator of the nation for San Juan; and the writer, who was elected president of the commission. Various complicated legal, scientific, and mining engineering questions were involved and had to be considered, finally resulting in drawing up and presenting to the Government a very extensive report, in which all the various questions were decided.

Curiously enough, however, out of several applicants, only one possessed a legal claim to the premium, and one of the difficulties which presented itself was that the law of 1870 did not concede to the commission the right of making an inspection of the coal-field for the dis-

covery of which the premium was asked. They were under the necessity to form a judgment from the mere evidence produced. In this particular case Dr. Brakebush, professor in the University of Cordoba, seemed to have examined the coal-field in question, and he drew up a long report for the interested parties, the contents of which formed some of the evidence before the commission.

The peculiarities of the law of 1870 and various other circumstances induced the commission to recommend the Government not to pay the amount of the premium claimed for the discovery until the claimants had made borings in order to prove the coal-field, and this recommendation was adopted. The parties interested purchased a diamond boring machine in North America, brought it here, and commenced to carry on boring operations, which are still in progress.

If the party should succeed, as Dr. Brakebush stated in his report, then the Government will have no alternative but to pay the premium; otherwise it will fall through.

Meanwhile, however, no Argentine coal has yet been produced to meet the enormous demand of the country for such fuel. All that is used continues to come from abroad. The returns show that for the year 1889 the receipts of foreign coal amounted to 658,054 tons, against 333,798 tons in 1888. All this coal came from Great Britain, except 49,764 tons, which is credited to the United States. As all the railways and all the industrial establishments of the country are thus dependent upon imported coal, it requires no argument to prove what a mine of wealth to the nation and finders would be the discovery of coal of merchantable quality and sufficient quantity.

Mining for the precious metals seems to make no progress. The "bonanza" has not yet been proclaimed, though at intervals the old story of rich leads is still repeated. In 1888 the total output was valued at \$1,526,057; in 1889, at \$1,629,160. The shipment of minerals for the latter year and nine months of 1890 was as follows:

Articles.	1889.		1890.	
	Quantity.	Value.	Quantity.	Value.
	<i>Kilograms.</i>		<i>Kilograms.</i>	
Auriferous sand.....	202,090	\$34,355	36,300	\$6,171
Bismuth.....	78,710	275,485	6,800	23,800
Borax.....	121,160	7,959	148,205	8,683
Copper in bars.....	56,390	22,556	77,392	30,956
Tin.....	353,468	176,733	107,840	53,920
Silver metal.....	25,840	258,400		
Copper mineral.....	167,545	45,237	87,464	23,616
Silver mineral.....	177,391	88,995	264,142	132,070
Lead mineral.....	110,007	8,800	93,155	7,468
Gold.....	7	4,277		
Lead, pure.....	31,860	2,549		
Silver, pure.....	19,022	703,814	5,952	238,080
Total.....		1,629,106		524,764

Considering the millions of dollars invested in Argentine mines, the showing could hardly be more unsatisfactory.

PETROLEUM.

In regard to petroleum, of which we are assured there are such immense subterranean rivers in the provinces of Mendoza, Salta, and Jujuy, there seems to be a doubt as to whether it is the "simon pure" article or not. A correspondent of the Standard of this city, who claims a thorough knowledge of the subject from many years' practical experience, makes the sweeping statement that "there is not 1 ounce of true petroleum in the country. All true geologists will confirm the statement." And he goes on to say:

Petroleum, (so called) is more or less abundant along the entire Pacific coast, from Alaska to Terra del Fuego; but along this entire distance there is not 1 ounce of true petroleum, a distance of some 8,000 miles.

The base of true petroleum is paraffine; the other is asphalt. The geological formations in which the two are found are wholly different. Kerosene from the one is easily distilled; the other requires three or four distillations and treatments, and then this product is greatly inferior to the other.

The asphalt petroleum is very rich in carbon and can not be utilized even for the manufacture of gas; its smoke soon fills the pipes. The Caspian oil is successfully utilized for steam purposes by first vaporizing it and combining it with superheated steam; but, after all known processes of refining, it is inferior to the Pennsylvania product, and must continue to be.

The sooner your readers get rid of this idea, that in any part of this Republic there is any true petroleum, the better for their time, their purses, and their reputation as business men.

All I can say is that those who have organized companies to exploit the material insist on it that the man who makes the above sweeping statements does not know what he is talking about. Meanwhile, however, no native kerosene has yet been seen upon the market.

The salt deposits of the Rio Negro are a great success, and those who are preparing the article for market find a ready sale for all they can supply.

ARGENTINE HARD WOODS.

There has been no cessation in the shipment of Argentine hard woods to European markets, where they are used for veneering and cabinet work; but the industry still lacks proper development. The exports of 1888 amounted to \$781,793; of 1889, to \$793,257; and for nine months of 1890, to \$911,542. The greater portion of these shipments were the quebracho logs, which take a polish as rich as rose-wood.

THE CATTLE INDUSTRY.

I referred in my last annual report to the encouraging outlook of the cattle, or "saladero," industry, owing to the increased demand for jerked beef in Brazil and other places. The exports confirm this view. The total amount shipped in 1888 was 26,449 tons, while for 1889 it was 41,767 tons. For the first nine months of 1890 the export was 31,464 tons.

The business of exporting frozen carcasses is taking firm foot-hold in this country, and, as new companies have recently been organized, it promises increased development.

The following table of shipments shows the progress of the industry since its commencement in 1885 :

Year.	Quantity.	Value.
	<i>Tons.</i>	
1885.....	2,860	\$75,323
1886.....	7,350	360,508
1887.....	12,038	963,112
1888.....	18,027	1,493,182
1889.....	27,489	1,399,276
1890 (9 months).....	15,590	1,246,272

In order, however, to give the companies a better margin of profits, and thus the greater encouragement, the Government now gives a 5 per cent. guaranty on the amount of the shipments.

The export to Europe of cattle on the hoof has been persistently tried during the last year or two; but, while the balance-sheets, as published, would indicate fair profits, the business makes no progress.

The driving of cattle over the Cordilleras to Chili and other adjoining countries is, however, assuming increased proportions. In 1888 the number exported thus was 94,726; in 1889 it was 139,637, and for the nine months of 1890 it has been 121,889. As the great western Pampas are now becoming more generally settled and cattle *estancias* have been opened in various places, even to the foot of the Andes, the industry will continue to increase—and the business is a paying one.

ARGENTINE TRANSIT TRADE.

The transit trade of the Argentine Republic not only shows but little change in its proportions during the last year, but the account has been so badly kept that it is difficult to make it intelligent. The following are the published figures :

Countries.	Ingress.	Egress.	Total.
Bolivia.....	\$3,327,645	\$106,487	\$3,434,132
Brazil.....	50,632	129,613	180,245
Paraguay.....	52,127	355,253	407,380
Uruguay.....	107,247	289,031	396,278
Various countries.....	1,119,541	3,856,628	4,976,169
Total.....	4,657,192	4,737,012	9,394,204

I assume that "various" in the above table means that it is not known to what country the goods were going or from what country they came, since the four countries named are the only ones adjoining the Argentine Republic or with which there could have been a transit trade.

RIVER COMMERCE.

There does not appear to be much change of figures in the river commerce of the year 1889, though, of course, at that date the full effects of the crisis

were not felt. The total movement was \$89,978,537, against \$94,968,486 for 1888.

The total tonnage engaged in the river commerce during 1889 was: Of sailing vessels, 2,582,606 tons, against 1,860,340 tons for the previous year; of steamers, 644,532 tons, against 732,178 tons for the previous year.

River transportation.—The quantity and value of the most important articles transported by river-steamers are seen in the following table:

Articles.	Quantity.	Value.
Bran.....tons...	6,363	\$105,446
High wine.....liters...	2,288,722	272,647
Sugar.....tons...	5,588	726,536
Lime.....do.....	1,523	1,090,521
Charcoal.....do.....	4,098	4,098,047
Sleepers.....number...	118,715	33,614
Macaroni.....tons...	1,079	215,963
Biscuit.....do.....	1,273	198,521
Flour.....do.....	51,118	3,576,309
Wood.....bundles...	148,368,135	741,841
Hard wood.....square meters...	4,999,563	1,999,823
Tobacco.....tons...	201	21,703
Wines.....liters...	347,400	63,590
Corn:		
Shelled.....tons...	103,543	2,070,862
Unshelled.....do.....	526	5,261
Pea-nuts.....do.....	3,162	126,489
Posts.....number...	631,141	189,441
Potatoes.....tons...	15,147	607,917
Raisins.....do.....	180	38,703
Baled hay.....do.....	2,544	30,538
Pickets.....number...	1,055,993	527,996
Salt.....tons...	180	112,082
Linseed.....do.....	12,659	632,951
Sole-leather.....number...	72,564	528,512
Wheat.....tons...	73,006	2,902,298
Yerba.....do.....	901	94,607

FOREIGN NAVIGATION.

The carrying trade of this country with other nations for the year 1889 continues to show an increase in tonnage. I compile the following tables from the returns of the national statistical office:

Table showing arrivals and departures.

Class of vessels.	Arrivals.		Departures.		Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Sailing vessels.....	8,222	1,675,345	5,479	1,264,755	13,701	2,941,100
Steamers.....	6,223	5,036,341	5,990	4,578,217	12,222	9,614,558
Total in 1889.....	14,445	6,711,686	11,469	5,842,972	25,823	12,555,958
Total in 1888.....	13,493	4,885,777	10,810	4,319,439	24,303	9,205,216
Increase.....	952	1,825,809	659	1,523,533	1,520	3,350,742

Table showing arrivals and departures at each port.

Ports.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Bahia Blanca.....	31	18,839			27	14,108		
Bella Vista.....			225	107,427			224	107,615
Buenos Ayres.....	4,430	1,086,459	1,937	2,098,431	1,885	720,569	1,708	1,653,318
Campaña.....	86	21,189	63	52,512	67	20,722	76	76,839
Colon.....	89	3,923	366	311,832	71	28,950	390	309,246
Concepcion.....	92	3,135	138	180,872	85	4,460	155	137,392
Concordia.....	246	13,453	458	335,190	240	16,882	476	334,694
Corrientes.....	70	14,487	255	112,442	92	13,195	228	102,520
Diamante.....			43	23,664			36	21,765
Empedrado.....			94	61,501			123	74,348
Esquina.....			183	96,796			166	90,887
Formosa.....			206	101,373			210	103,879
Goya.....			228	106,536			237	104,021
Gualeduy.....	30	4,457			36	7,600		
Gualeduyachú.....	104	11,036	380	176,038	88	14,043	404	223,861
La Paz.....	2	651	227	111,110	29	4,244	239	112,876
La Plata.....	2,030	191,045	122	16,561	1,863	166,236	115	16,898
Monte Caseros.....	22	440	28	2,090	33	488	10	664
Paraná.....	29	5,639	229	108,399	20	2,430	237	115,958
Paso de los Libres.....	67	627			63	585		
Posadas.....	72	600			85	559		
Rosario.....	643	236,490	737	719,833	527	164,134	566	499,408
San Nicolas.....	59	24,985	196	303,707	123	20,775	182	275,095
Santa Fé.....	38	8,282	49	30,046	24	6,108	5	1,126
Villa Constitucion.....	35	16,903			39	26,150		
Zárate.....	19	5,788	25	32,094	30	10,595	42	53,016
All other ports.....	28	6,317	34	3,887	46	12,922	161	162,728
Total.....	8,222	1,675,345	6,223	5,036,341	5,479	1,264,755	5,990	4,578,217

Table showing arrivals from, and departures to, each country.

To and from—	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Germany.....	47	22,692	210	336,763	8	2,675	187	292,240
Antilles.....	4	2,989			470	269,738	6	8,042
Austria.....	3	592						
Belgium.....	39	22,421	156	230,290	13	4,191	110	168,517
Brazil.....	147	21,390	116	27,154	296	75,217	127	188,874
Canada.....	39	33,168			24	17,898		
Spain.....	79	40,826	45	56,741	41	20,514	27	43,778
United States.....	592	378,229	30	46,709	483	293,335	28	44,577
France.....	102	52,171	235	502,661	20	8,520	225	494,261
Italy.....	39	16,128	203	342,641	16	6,093	123	225,911
Norway.....	2	1,001			1	412		
Paraguay.....	238	16,080	1,536	872,729	245	17,085	1,703	869,609
Great Britain.....	1,096	611,877	564	769,114	440	211,972	256	401,541
Sweden.....	3	1,268						
Uruguay.....	5,749	443,129	3,121	1,835,267	3,194	203,633	3,081	1,818,459

Table showing arrivals from, and departures to, each country—Continued.

To and from—	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Africa.....					5	1,808	1	1,278
Asia.....					1	760		
Australia.....					2	1,508		
Chile.....			1	1,434	32	38,081	3	4,817
Denmark.....					2	846		
Colombia.....					1	1,298		
Mexico.....					5	2,440	1	1,278
Nicaragua.....					1	653		
Holland.....					1	398		
Peru.....					9	7,325		
Portugal.....					8	3,186	6	7,937
All other countries....	43	11,384	6	4,738	141	75,169	6	7,007
Total.....	8,222	1,675,345	6,223	5,036,341	5,479	1,264,755	5,990	4,578,217

Table showing arrivals and departures according to flag.

Flag.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German.....	138	64,110	218	348,053	150	64,854	197	308,838
Austrian.....	94	50,263			82	39,857		
Brazilian.....	27	1,323	265	118,212	22	1,698	234	85,663
Danish.....	27	9,754			22	7,125		
Spanish.....	71	21,265	43	63,244	56	15,160	28	44,487
French.....	83	20,616	242	525,063	67	15,627	216	486,515
Dutch.....	20	8,836			14	4,933		
British.....	738	412,125	2,244	2,189,658	509	313,539	2,321	2,003,717
Italian.....	400	192,015	175	288,662	328	165,194	134	236,993
Argentine.....	4,246	304,765	2,674	1,369,602	2,509	144,330	2,557	1,288,700
American.....	207	126,800			173	102,395		
Norwegian.....	567	306,256			560	289,939		
Paraguayan.....	206	16,561	8	1,231	127	7,358	18	10,458
Russian.....	16	10,994			12	6,330		
Swedish.....	98	45,878	2	555	80	34,340		
Uruguayan.....	1,266	80,373	317	78,317	758	50,856	259	72,307
Belgian.....			18	26,543			11	16,971
Not named.....	18	3,411	17	27,201	10	1,220	15	23,554
Total.....	8,222	1,675,345	6,223	5,036,341	5,479	1,264,755	5,990	4,578,217

I give the foregoing tables as I find them officially published. I can not undertake to explain the very large differences between the arrivals and departures of vessels. Indeed, it would be much more satisfactory if the Argentine statistical office simply gave the tables of arrivals, with their tonnage, as is done in the United States, and not count the same vessel and the same tonnage twice—when it enters and when it departs,

These returns show that during the year 1889 not a single steamer bearing the flag of the United States arrived from abroad. According to the tables, there were 30 arrivals of steamers from the United States; but they were what are called "tramps," bearing the British flag. It appears that there were 592 arrivals of sailing vessels from the United States during 1889, of which 207 carried the American flag.

During the first ten months of the present year, owing to the crisis and the general derangement of trade, there has been a remarkable decrease in the foreign shipping at all Argentine ports. Only 23 American vessels have, up to the present month of 1890, entered at this consulate, whereas up to the same time last year 116 had entered.

FOREIGN COMMERCE.

The foreign commerce of the Argentine Republic for 1889 looms up in its proportions beyond any thing in its previous statistics. The imports amounted to \$164,569,884, and the exports to \$122,815,057; total, \$287,384,941. The excess of imports over exports is \$41,751,827. For the sake of comparison, I give the returns of the Argentine foreign trade for the last ten years:

Year.	Imports.	Exports.	Total.
1880.....	\$45,535,880	\$58,380,787	\$103,916,667
1881.....	55,755,927	57,938,272	113,644,199
1882.....	61,246,045	60,388,939	121,634,984
1883.....	80,435,828	60,207,976	140,643,804
1884.....	94,056,144	68,029,836	162,085,980
1885.....	92,221,969	83,879,100	176,101,069
1886.....	95,408,745	69,834,841	165,243,586
1887.....	117,352,125	84,921,820	201,773,945
1888.....	128,412,110	100,111,903	228,524,013
1889.....	164,569,884	122,815,057	287,384,941

As I have heretofore stated, while the imports of the country are given in gold dollars, the exports are stated in paper, and which, if reduced to a gold basis at the mean rate of exchange, would not much exceed \$75,000,000. Thus it will be observed that, while for that year there was no corresponding increase in exports, the imports exceeded those of any year in the history of the country, the balance of trade against the Argentine Republic really amounting to upwards of \$80,000,000 (gold).

No. 124—4.

Imports and exports by custom-houses.—The following table, compiled from the returns published by the national statistical office, shows the imports and exports of each custom-house in the country :

Custom-house.	Imports.	Exports.	Total.
Aj6.....	\$16,431	\$366,864	\$383,295
Alvear.....	8,444	2,475	10,919
Baradero.....	55,944	353,480	409,424
Bahia Blanca.....	675,854	3,506,123	4,181,977
Bella Vista.....	59,313	47,747	107,060
Buenos Ayres.....	120,369,894	78,221,632	198,591,526
Campaña.....	1,856,115	917,452	2,773,567
Colon.....	65,291	1,552,468	1,617,699
Concepcion.....	127,266	374,325	501,591
Concordia.....	1,511,406	3,604,512	5,115,918
Corrientes.....	545,348	31,851	577,199
Diamante.....	5,270	34,363	39,633
Empedrado.....	29,914	101,479	131,393
Esquina.....	166,439	14,928	181,437
Formosa.....	7,072	8,082	15,154
Goya.....	79,134	8,157	87,291
Guaileguay.....	120,393	930,989	1,051,382
Guaileguachú.....	213,178	1,547,366	1,760,544
Helvecia.....	2,424	558,552	560,976
Jujuy.....	64,681	234,821	299,502
La Cruz.....	882		882
La Paz.....	140,570	130,179	270,749
La Plata.....	2,756,014	670,605	3,426,619
Mendoza.....	56,362	1,510,419	1,566,781
Monte Caseros.....	98,268	278,081	376,349
Oran.....	574	7,142	7,716
Paraná.....	1,229,659	212,151	1,441,810
Paso de los Libres.....	19,369	45,244	64,613
Patagones.....		267,089	267,089
Rosario.....	29,503,917	13,130,593	42,634,510
Salta.....	47,763	113,140	160,903
Santa Fé.....	1,823,990	602,980	2,426,970
San Juan.....	41,640	649,700	691,340
San Lorenzo.....		415,270	415,270
San Nicolas.....	1,623,850	7,828,288	9,452,138
San Pedro.....	35,199	2,253,994	2,289,193
Santo Tomé.....	10,692	69,110	79,802
Trinchera de San José.....	58,020		58,020
Villa Constitucion.....	794,087	616,525	1,410,612
Victoria.....	30,658	9,835	40,493
Zárate.....	315,559	1,587,036	1,902,595
Total.....	164,569,884	122,815,057	287,384,941

From this table it will be seen that the entire trade of the country is becoming more and more centralized in Buenos Ayres and Rosario, owing, of course, to the better facilities which those two ports offer for the handling of cargoes. Out of the entire imports and exports of the country, all but about \$46,000,000 was dispatched at Buenos Ayres or Rosario.

Argentine trade according to nationality.—Also, from the returns published by the national statistical office, I have compiled the following table, giving the countries among which the Argentine trade of 1889 was distributed :

From and to—	Imports.	Exports.	Total.
Germany.....	\$15,477,754	\$17,120,472	\$32,598,226
Antilles.....	910	1,290,472	1,291,382
Austria.....	42,035	.....	42,035
Belgium.....	13,958,247	16,326,423	30,284,670
Bolivia.....	63,313	328,203	391,516
Brazil.....	2,607,017	7,522,835	10,129,852
Chili.....	19,509	2,504,727	2,524,236
Spain.....	4,565,470	3,332,115	7,897,585
United States.....	16,801,750	7,726,691	24,528,441
France.....	30,237,407	38,264,414	68,501,821
Italy.....	10,188,189	3,930,134	14,118,323
Holland.....	831,372	116,479	947,851
Paraguay.....	1,377,543	855,292	2,232,835
Portugal.....	72,567	189,581	262,148
Great Britain.....	56,820,169	14,931,394	71,751,563
Norway and Sweden.....	242,295	.....	242,295
Africa.....	.....	27,537	27,537
Uruguay.....	7,206,315	5,393,960	12,600,275
Countries not named.....	4,057,922	2,954,328	7,012,250
Total.....	164,569,884	122,815,057	287,384,941

It will be observed from the foregoing table that in the amount of imports Great Britain continues overwhelmingly to occupy the first place, her share in 1889 amounting to about 35 per cent. of the whole, while France continues to stand next, her share being a little over 18 per cent. Meanwhile, however, the United States, which heretofore stood after both Germany and Belgium, has now come up to the third place in the category, our share for 1889 amounting to 10 per cent. of the total imports.

In the amount of exports France still occupies the first place, the shipments of the Argentine Republic to that country for 1889 amounting to 36 per cent. of the whole, while Germany stands for 14 per cent., Belgium for 13½ per cent., Great Britain for 12 per cent., and the United States, as heretofore, standing for a little over 6 per cent.

Of the total foreign trade of the Argentine Republic for 1889, Great Britain continues to hold the first place, her trade amounting to 25 per cent., while France, just on her heels, now stands for 24 per cent., Germany stands for 11½ per cent., Belgium for 10½ per cent., and the United States for 9 per cent.

In view of the present distracted condition of trade and the general want of interest which just now such statistics possess, I do not deem it necessary to go into minute comparisons showing what countries have increased and what ones have reduced their trade since the previous year.

DETAILS OF THE IMPORT AND EXPORT TRADE.

In the following tables, which I have translated and compiled from the returns of the national statistical office, will be found the amount and custom-house valuation of all articles imported into, or exported from, the Argentine Republic during the year 1889:

Table showing imports into the Argentine Republic in 1889.

Articles.	Quantity.	Official value.
Live stock:		
Horses and asses.....number...	547	\$73,138
Hogs.....do.....	87	1,840
Sheep.....do.....	19,479	43,107
Mules.....do.....	4	100
Cattle.....do.....	608	35,748
Total.....		153,933
Comestibles:		
Olive oil.....kilograms...	6,631,788	2,121,981
Olives.....do.....	666,338	104,223
Starch.....do.....	812,258	143,909
Rice.....do.....	15,924,311	1,433,191
Saffron.....do.....	2,926	40,964
Sugar—		
Refined.....do.....	33,030,577	6,275,810
All other classes.....do.....	1,435,329	186,591
Cod-fish.....do.....	1,251,359	204,456
Cocoa.....do.....	231,323	57,831
Coffee.....do.....	2,746,524	803,183
Cinnamon.....do.....	1,602	460
Meat.....do.....	199,936	109,943
Barley.....do.....	681,402	22,094
Chocolate.....do.....	210,776	210,776
Coca.....do.....	79,186	55,660
Confectionery and dulces.....do.....	249,161	174,446
Spices and condiments.....do.....	1,722,785	501,815
Farina.....do.....	1,455,608	72,780
Pecula.....do.....	104,371	12,859
Macaroni.....do.....	318,360	63,734
Fresh fruits.....		49,872
Dry and preserved fruits.....kilograms...	2,043,997	335,570
Flour—		
Wheat.....do.....	60,942	5,061
Of all other grain.....do.....	89,215	14,342
Hams.....do.....	246,567	133,148
Vegetables, dried and canned.....do.....	2,892,794	318,140
Butter.....do.....	17,501	9,100
Lard.....do.....	358,335	111,161
Molasses.....do.....	12,385	1,903
Crackers and biscuits.....do.....	73,333	22,042
Raisins.....do.....	94,092	24,789
Figs.....do.....	11,311	1,719
Canned fish.....do.....	1,775,885	740,276
Cheese.....do.....	1,654,077	954,682
Salt.....do.....	1,139,467	56,973
Sausages.....do.....	37,668	36,822
Tea.....do.....	459,296	459,296
Bacon.....do.....	5,518	2,759
Wheat.....do.....	31,051,041	122,042

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Comestibles—Continued.		
Yerba—		
Paraguayan..... kilograms...	6,936,096	\$970,764
Brazilian..... do.....	13,837,059	1,383,707
Total.....		18,350,904
Liquors:		
Mineral waters, in bottles..... dozens...	84,885	135,267
Wormwood—		
In bottles..... do.....	24,701	148,206
In casks..... liters...	94,814	37,359
Alcohol—		
In casks..... do.....	248,001	39,658
In bottles..... dozens...	30,183	127,198
Bitters—		
In bottles..... do.....	66,211	397,266
In casks..... liters...	19,592	8,228
Café..... do.....	65,033	9,753
Beer—		
In casks..... do.....	647,456	110,067
In bottles..... dozens...	482,245	1,077,032
Chartreuse, in bottles..... do.....	3,572	53,580
Cider—		
In bottles..... do.....	1,784	3,747
In casks..... liters...	240	86
Brandy—		
In casks..... do.....	134,771	48,518
In bottles..... dozens...	132,865	797,190
Gin—		
In bottles..... do.....	2,427	7,299
In casks..... liters...	1,455,076	214,504
Syrups.....		1,608
Rum—		
In casks..... liters...	24,707	9,882
In bottles..... dozens...	4,471	35,768
Whisky—		
In bottles..... do.....	9,334	39,199
In casks..... liters...	9,558	3,823
Wine—		
In bottles:		
Champagne..... dozens...	27,552	234,193
Sherry..... do.....	9,690	77,520
Port..... do.....	26,690	213,520
Bordeaux..... do.....	18,124	108,744
Vermouth..... do.....	82,261	493,566
All other..... do.....	27,862	145,217
In casks:		
Vermouth..... liters...	68,033	20,409
Sherry..... do.....	98,647	51,291
Port..... do.....	125,955	65,494
Bordeaux..... do.....	39,408,403	3,940,840
All other—		
Fine..... do.....	28,848	8,429
Common..... do.....	66,212,821	6,621,222
Vinegar—		
In casks..... do.....	52,004	3,643
In bottles..... dozens...	8,102	12,173
Total.....		15,301,607

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Tobacco:		
Cigars—		
Havana.....kilograms...	38,656	\$354,751
Other classes.....do.....	342,654	422,446
Cigarettes.....do.....	8,921	16,977
Leaf—		
Havana.....do.....	101,538	60,923
Other classes.....do.....	4,089,480	872,213
Fine cut—		
Havana.....do.....	72,954	58,360
Other classes.....do.....	218,379	99,400
Snuff.....do.....	8,952	10,718
Total.....		1,895,788
Spun and woven goods:		
Carpet matting.....meters...	61,049	25,520
Mats.....dozens.....	1,200	3,963
Frieze.....kilograms...	25,744	9,385
Carpeting.....do.....	642,042	634,291
Raw cotton.....do.....	19,618	1,282
Pack-cloth.....do.....	12,007,666	2,401,530
Bramant.....do.....	2,140,607	1,498,425
Baize.....do.....	5,461	10,161
Sail-cloth.....do.....	453,474	452,813
Cassimeres—		
All wool.....do.....	1,283,106	2,941,123
Mixed.....do.....	598,584	538,723
Ribbons—		
Silk.....do.....	21,765	500,595
Other classes.....do.....	38,474	141,250
Cord—		
Silk.....do.....	472	2,421
Other classes.....do.....	212	506
Hair-cloth.....do.....	43,230	3,475
Edging and inserting.....do.....	139,302	762,758
Tow cloth.....do.....	144,909	26,083
Blankets—		
Woolen.....do.....	10,794	26,737
Other classes.....do.....	126,867	139,284
Flannels—		
Woolen.....do.....	360,528	721,056
Other classes.....do.....	7,984	10,377
Thread—		
Pack.....do.....	129,273	49,126
Common.....do.....	1,004,005	177,980
Silk.....do.....	7,125	111,572
Yarn.....do.....	36,987	57,980
Impermeable cloth.....do.....	287,825	107,182
Rope and cordage.....do.....	1,022,729	196,326
Duck and sail-cloth.....do.....	1,149,461	725,028
Wicking.....do.....	92,000	71,185
Billiard cloth.....do.....	8,482	32,230
Houseline and twine.....do.....	1,708,579	600,947
Raw hemp.....do.....	657,157	45,931
Soles for alpargata shoes.....do.....	960,886	288,265
Prunella cloth.....do.....	2,727	4,517
Gold and silver lace.....do.....		12,871
Silk, woolen, and cotton lace.....kilograms...	27,920	152,567
Cotton goods.....do.....	6,379,441	4,975,647
Hemp goods.....do.....	111,288	49,569

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Spun and woven goods—Continued.		
Linen goods.....kilograms...	82,745	\$168,548
Woolen goods.....do.....	349,406	965,752
Mixed goods.....do.....	735,309	1,899,700
Silk goods.....do.....	70,231	1,163,415
Jute goods.....do.....	122,375	35,471
Silk velvet.....do.....	2,092	38,368
Gutta-percha goods.....do.....	19,041	50,200
Chintz and calicoes.....do.....	1,463,454	1,317,105
Total.....		24,149,242
Clothing, etc.:		
Shirts.....dozens.....	33,113	357,568
Chemises.....do.....	4,967	36,130
Undershirts—		
Silk.....kilograms.....	1,591	26,461
Other classes.....do.....	316,968	398,621
Drawers—		
Silk.....do.....	5,702	8,854
Other classes.....do.....	6,799	45,034
Cravats.....dozens.....	54,628	185,449
Dressing-gowns, etc.....do.....	1,378	10,695
Collars and cuffs.....do.....	67,363	116,219
Corsets.....do.....	12,105	80,777
Hats and bonnets.....do.....	5,520	25,049
Gloves, other than kid.....do.....	4	103
Do.....kilograms.....	7,352	52,613
Stockings—		
Silk.....do.....	1,208	19,328
Other classes.....do.....	430,424	842,635
Pocket-handkerchiefs—		
Silk.....do.....	19,614	308,775
Other classes.....do.....	218,028	390,010
External wearing apparel for men.....		1,328,703
Towels.....kilograms.....	84,120	128,884
Umbrellas and parasols.....number.....	129,850	136,247
Hats and caps for men.....dozens.....	114,388	711,974
Various articles—		
Cotton goods.....		1,210,560
Linen goods.....		255,366
Woolen goods.....		602,758
Mixed goods.....		619,759
Silk goods.....		130,642
Other goods.....		29,188
Total.....		8,080,180
Drugs and chemicals:		
Acids—		
Sulphuric.....kilograms.....	544,705	27,238
Nitric.....do.....	3,284	853
Other.....do.....		43,854
Oils—		
Linseed.....kilograms.....	754,415	122,421
Palm.....do.....	62,790	12,548
Other.....do.....		470,395
White lead.....kilograms.....	22,189	3,838
Tar.....do.....	131,832	6,759
Alum.....do.....	64,308	3,263
Liquid ammonia.....do.....	42,976	15,042
Indigo.....do.....	1,305	2,009
Sulphur.....do.....	93,486	3,654

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Drugs and chemicals—Continued.		
Spirits of turpentine.....kilograms	376, 306	\$48, 796
Varnish.....do	214, 491	171, 595
Bicarbonate of potassium.....do	1, 185	540
Bicarbonate of soda.....do	105, 642	7, 395
Benzine.....do	44, 036	6, 930
Bitumen.....do	93, 390	26, 151
Borax.....do	38, 589	9, 949
Chlorate of lime.....do	62, 615	3, 148
Carbonate of magnesia.....do	2, 186	874
Carbonate of potassium.....do	11, 545	1, 732
Carbonate of soda.....do	255, 103	10, 051
Glue.....do	187, 549	27, 941
Paints—		
In powder.....do	1, 733, 253	133, 787
Prepared.....do	2, 330, 575	247, 374
Fire-works.....do	70, 375	24, 632
Dextrine.....do	7, 050	1, 410
Stearine.....do	24, 500	7, 350
Essences.....do		60, 790
Specifics for curing sheep scab.....do		334, 085
Glucose.....kilograms	154, 936	12, 394
Phosphorus.....do	8, 170	8, 033
Gelatine.....do	20, 421	12, 687
Gums.....do	140, 381	47, 624
Glycerine.....do	17, 409	7, 539
Iodide of potassium.....do	663	3, 978
Soap—		
Common.....do	34, 988	8, 646
Perfumed.....do	75, 605	50, 156
Malt.....do	2, 439, 197	243, 920
Prepared chemicals.....do		469, 733
Perfumery.....do		461, 252
Resin.....kilograms	2, 669, 181	65, 355
Potash.....do	16, 742	3, 428
Powder and other mixed explosives.....do	102, 087	37, 378
Pharmaceutical products.....do		58, 054
Chemical products.....do		946, 970
Chloride of soda.....hectoliters	603, 829	374, 401
Calcined soda.....kilograms	2, 491, 809	74, 681
Caustic soda.....do	47, 185	2, 358
Sulphate of iron.....do	3, 350	67
Sulphate of magnesia.....do	9, 263	927
Sulphate of quinine.....do	36	1, 440
Sulphate of lime.....do	374, 390	7, 922
Printing and lithographing ink.....do	44, 425	13, 362
Writing-ink, all kinds.....do	66, 988	6, 698
Turpentine.....do	481	49
Vaseline.....do	3, 623	1, 941
Total.....do		4, 756, 797
Lumber and wooden articles :		
Lumber—		
Pine.....square meters	18, 275, 809	7, 813, 897
Walnut.....do	108, 578	108, 578
Oak.....do	54, 212	38, 372
Cedar.....do	175, 320	74, 652
Mahogany.....do	990	1, 684
Quebracho.....do	129, 086	25, 817
All other kinds.....do	892, 751	326, 532
Trunks and boxes.....number	98, 296	14, 752

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Lumber and wooden articles—Continued.		
Carts and carriages.....number.....	961	\$411,031
Shooks and staves.....do.....	19,692	50,142
Musical instruments of wood.....do.....		159,930
Launches and boats.....number.....	34	117,360
Furniture in general.....do.....		1,385,837
Pianos.....number.....	2,637	569,059
Canes.....dozens.....	4,904	21,855
Other articles of wood.....do.....		987,360
Total		12,106,858
Paper and paper manufactures :		
Paper—		
Writing.....kilograms.....	562,107	176,768
Drawing.....do.....	18,462	9,232
Printing.....do.....	4,994,345	1,304,456
Wall.....do.....	282,627	118,718
Wrapping.....do.....	1,007,366	212,498
Engraving.....do.....	41,133	20,570
Cigarette.....do.....	202,326	170,978
Blotting.....do.....	9,966	3,997
Litmus.....reams.....	7,697	20,036
Silk.....kilograms.....	19,354	7,746
Albums.....dozens.....	516	6,156
Playing-cards.....gross.....	2,507	37,605
Pasteboard.....kilograms.....	918,901	155,678
Papier-maché articles.....do.....		330,959
Other articles of paper.....do.....		326,121
Blank books.....kilograms.....	290,241	191,351
Printed books.....do.....	617,320	617,320
Printed music.....do.....	28,545	22,886
Other printed matter.....do.....	114,149	124,945
Polygraphic materials.....do.....		70,805
Total		3,940,824
Leather and leather manufactures :		
Shoes—		
Leather.....dozens.....	59,720	540,933
Other kinds.....do.....		38,488
Pocket-books, cigar cases, etc.....do.....	16,377	54,091
Valises and satchels.....number.....	4,909	18,820
Saddles.....do.....	2,241	22,788
Leather gloves.....kilograms.....	2,435	38,960
Harness.....do.....		202,499
Other articles of leather.....do.....		163,331
Hides dressed with the hair.....do.....		4,761
Raw hides.....do.....		4,144
Sole-leather.....kilograms.....	3,393	7,032
Furs.....do.....		1,496,949
Total		2,502,796
Iron and iron manufactures :		
Steel, unmanufactured.....kilograms.....	3,971,192	222,778
Anchor.....do.....	19,601	1,960
Arms and munitions, etc.....do.....		370,078
Wire—		
For fencing.....kilograms.....	39,414,060	1,983,194
All other kinds.....do.....	653,095	58,099
Needles.....thousands.....	37,250	22,358
Kitchen utensils.....do.....		1,242,288
Nails.....kilograms.....	2,417,404	218,616

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Iron and iron manufactures—Continued.		
Chains.....kilograms...	516,578	\$57,459
Safes.....do.....	345,093	75,923
Piping.....do.....	7,494,822	570,166
Stoves and stove pipes.....do.....	353,653	35,365
Knives and cutlery.....do.....		365,381
Carriage and wagon springs and axles.....do.....		144,090
Iron hoops.....kilograms...	137,746	5,558
Iron ornaments.....do.....		1,294,132
Unmanufactured iron.....kilograms..	85,249,500	2,883,058
Tools and implements.....do.....		1,027,454
Iron furniture.....do.....		95,224
Pens.....gross.....	63,479	12,696
Girders and columns.....kilograms...	26,957,295	1,081,578
Agricultural machinery and implements—		
Plows.....number.....	39,469	369,123
Corn shellers.....do.....	1,230	29,133
Mowers.....kilograms.....	31,034	15,957
Rakes.....do.....	35,542	11,728
Plowshares.....do.....	104,790	30,714
Planters.....number.....	206	20,441
Harvesters.....do.....	4,088	544,020
Threshers.....do.....	63	76,410
Shovels, spades, and picks.....kilograms...	452,668	96,899
All other kinds.....do.....		106,606
Pumps.....number.....	892	13,944
Sewing-machines.....do.....	22,203	317,346
Printing and lithographing presses.....do.....	713	130,595
Presses of other kinds.....kilograms...	5,886	979
Other machinery.....do.....		5,171,438
Other iron articles.....do.....		5,964,315
Total.....		24,727,113
Materials for public works :		
Railways.....		19,249,811
Gas.....		1,138,024
Mining.....		196,975
Electric lighting.....		236,218
Sugar-mills.....		159,029
City sewerage.....		439,327
Madero port works.....		394,495
Tram-ways.....		638,870
Telegraph.....		45,781
La Plata public works.....		1,203,578
Telephones.....		30,832
Water-works.....		440,809
Total.....		24,173,749
Metals and their manufactures :		
Jewelry.....		949,544
Bronze—		
In powder.....kilograms...	2,550	7,650
Articles of art.....do.....		6,598
Copper and bronze.....kilograms...	116,732	49,027
Manufactured.....do.....		274,336
Tin composition.....kilograms...	74,124	31,133
Manufactured.....do.....		6,535
Instruments—		
Scientific, etc.....		133,699
Musical.....		2,017

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Metals and their manufactures—Continued.		
Tin.....kilograms...	1,922,137	\$151,628
Manufactured.....		85,173
Metallic belting.....		625,248
Gold-leaf.....thousands...	460	20,700
Lead.....kilograms...	1,829,865	160,708
Manufactured.....		240,501
Watches—		
Gold.....number...	12,299	336,858
Other metals.....do.....	58,472	246,259
Clocks.....do.....	41,486	63,916
Weights and scales.....do.....	3,946	27,181
Printing type.....kilograms...	119,225	62,009
Zinc.....do.....	2,782,903	235,747
Manufactured.....		35,432
Other metals, manufactured.....		118,910
Total.....		3,871,811
Glass and stone ware and ceramic products :		
Tiles—		
Flooring.....thousands...	15,516	305,508
Paving.....do.....	3,064	77,967
Glass bottles.....dozens...	387,641	116,289
Lime.....hectoliters...	7,330	5,350
Crystals for watches and spectacles.....		14
Glassware in general.....		910,305
Glass and porcelain lamps.....		611,703
Bricks.....thousands...	545	17,159
Stone-ware.....		436,767
Marble and alabaster.....square meters...	61,907	123,161
Marble slabs for tables, etc.....do.....	6,941	14,806
Marble works of art, etc.....		120,316
Mosaics.....kilograms...	2,443,387	146,433
Terra cotta works of art, etc.....		71,194
Precious stones, unset.....		221,617
Stones for lithographing.....kilograms...	78,479	7,848
Grindstones.....do.....	284,253	9,560
Building stone.....		1,770,422
Slate roofing.....square meters...	20,067	8,026
Porcelain.....		340,375
Roofing tiles.....thousands...	44,978,716	899,568
Glass and crystal.....square meters...	414,122	176,160
Mirrors and looking-glass.....do.....	30,430	195,398
Total.....		6,658,646
combustibles, etc. :		
Candles.....kilograms...	407,510	122,263
Nut coal.....do.....	658,054,486	6,515,141
Coke.....do.....	2,610,340	44,031
Wax matches.....do.....	514	436
Wooden matches.....do.....	11,348	3,633
Kerosene.....liters...	18,165,516	908,306
Total.....		7,593,810
Miscellaneous manufactured articles :		
Fancy articles.....		1,535,333
Buttons.....gross...	207,956	106,173
Cork.....kilograms...	212,996	63,915
Sponges.....do.....	6,098	34,330
Cases and work-boxes.....dozens...	152	674

Table showing imports into the Argentine Republic in 1889—Continued.

Articles.	Quantity.	Official value.
Miscellaneous manufactured articles—Continued.		
Gutta-percha goods.....		\$110,331
Toys.....		240,505
Pencils.....gross.....	9,799	14,299
Hops.....kilograms.....	56,773	28,390
Church ornaments.....		30,309
Pichua.....kilograms.....	23,246	16,273
Paintings.....		76,822
Straw goods.....		162,248
Live plants.....		32,916
Leeches.....thousands.....	50	750
Seeds.....kilograms.....	644,289	94,298
Apothecary utensils, etc.....		413,587
Writing utensils and office materials.....		124,707
Various unenumerated articles.....		3,219,966
Total.....		6,305,826
Grand total.....		164,569,884

Table showing exports from the Argentine Republic during 1889.

Articles.	Quantity.	Official value.
Animal and animal products :		
Asses.....number.....	8,821	\$88,300
Horses and mares.....do.....	5,961	102,005
Hogs.....do.....	2	32
Sheep.....do.....	19,526	66,527
Mules.....do.....	12,104	242,000
Cattle.....do.....	139,637	3,194,013
Horns.....kilograms.....	1,756,710	277,214
Hair.....do.....	1,794,622	1,115,505
Skins—		
Goat.....do.....	1,045,280	1,590
Kid.....do.....	369,554	8,677
Sheep.....do.....	36,378,885	11,305,593
Ox and cow hides—		
Dry.....number.....	2,424,596	8,448,009
Salted.....do.....	966,177	5,260,400
Horse hides—		
Dry.....do.....	40,358	77,487
Salted.....do.....	156,616	759,588
Hide cuttings.....kilograms.....	1,488,512	90,799
Wool, unwashed.....do.....	141,774,435	56,709,774
Total.....		89,282,715
Agricultural products :		
Bran.....kilograms.....	2,382,186	69,082
Peas.....do.....	6,869	206
Canary-seed.....do.....	1,110,558	66,633
Barley.....do.....	231,286	7,818
Fresh fruit.....		11,299
Linseed.....kilograms.....	28,195,816	1,607,162
Corn.....do.....	432,590,679	12,977,721
Pea-nuts.....do.....	240,365	9,615
Potatoes.....do.....	367,428	14,697
Baled hay.....do.....	20,434,022	572,153
Beans.....do.....	49,339	2,468

Table showing exports from the Argentine Republic during 1889—Continued.

Articles.	Quantity	Official value.
Agricultural products—Continued.		
Seeds.....kilograms...	6,165	\$247
Wheat.....do.....	22,806,373	1,596,446
Total.....		16,935,547
Industrial products :		
Animal oil.....kilograms...	97,275	21,887
Sugar.....do.....	134,492	17,484
Preserved meat.....do.....	1,130,146	201,714
Canned soups.....do.....	27,555	6,889
Frozen sheep carcasses.....do.....	16,532,545	1,322,604
Specifics for curing sheep scab.....		2,746
Extract of beef.....kilograms...	52,834	105,668
Macaroni.....do.....	40,958	8,191
Biscuits and crackers.....do.....	217,421	19,567
Glycerine.....do.....	470,083	186,033
Guano.....do.....	550,000	16,500
Flour.....do.....	3,360,876	510,853
Meat flour.....do.....	79,400	19,850
Salted tongues.....do.....	391,374	58,706
Butter.....do.....	4,026	1,618
Peppin.....do.....	18,802	18,802
Wine, native.....liters.....	31,121	4,979
Cheese.....kilograms...	6,630	1,266
Grease and tallow.....do.....	18,319,282	3,297,471
Jerked beef.....do.....	41,767,860	6,139,873
Tripes—		
Salted.....do.....	121,584	4,863
Dry.....do.....	3,650	128
Frozen beef carcasses.....do.....	734,264	58,742
Other frozen meats.....do.....	224,119	17,930
Total.....		11,946,366
Products of the forest :		
Vegetable carbon.....hectoliters...	134,307	134,307
Sleepers.....number.....	1,934	5,802
Posts and palings.....do.....	48,195	6,265
Various woods (cabinet).....		73,169
Nandubuy posts.....number.....	252,415	88,357
Quebracho—		
Logs.....kilograms...	14,096,031	281,921
Timber.....do.....	508,589	203,436
Total.....		793,257
Mineral products :		
Auriferous sand.....kilograms...	202,090	34,355
Bismuth.....do.....	78,710	275,485
Borax.....do.....	121,160	7,939
Copper, in bars.....do.....	56,390	22,556
Tin.....do.....	353,468	176,733
Silver metal.....do.....	25,840	258,400
Ore—		
Copper.....do.....	167,545	45,237
Silver.....do.....	177,991	88,995
Lead.....do.....	110,007	8,800
Bullion—		
Gold.....do.....	7	4,277
Silver.....do.....	19,022	703,814
Lead, unmanufactured.....do.....	31,860	2,549
Total.....		1,629,160

Table showing exports from the Argentine Republic during 1889—Continued.

Articles.	Quantity.	Official value.
Products of the chase :		
Skins—		
Carpincho.....number.....	50,720	\$76,587
Nutria.....kilograms.....	102,431	133,160
All other kinds.....		27,069
Ostrich feathers.....kilograms.....	31,505	74,983
Total.....		311,799
Miscellaneous articles :		
Bones and bone-ash.....kilograms.....	27,680,373	653,857
Wax.....do.....	12,423	3,727
Ice.....do.....	96,800	1,936
Old iron.....do.....	2,273,190	45,464
Honey.....do.....	84,492	10,139
Live plants.....		1,400
Salt.....hectoliters.....	85,300	52,886
Dried blood.....kilograms.....	463,906	13,918
Vermicelli.....do.....	10,500	1,260
Sole-leather.....		1,632
Leaf tobacco.....kilograms.....	26,262	2,616
Linseed cakes (pressed).....do.....	199,278	29,891
Pea-nut cakes (pressed).....do.....	254,242	38,136
Roots.....do.....	64,932	9,740
Other articles of native production.....		584,113
Other articles re-exported.....		247,024
Ship stores.....		218,474
Total.....		1,916,213
Grand total.....		122,815,057

TRADE BALANCES AGAINST THE COUNTRY.

From the foregoing tables will be seen once more the persistency with which the old habit of overtrading has for years continued to distinguish the foreign trade of the Argentine Republic. One would suppose, in the midst of the monetary and financial crisis which began four years ago and which has been gradually developing in its proportions, that there would be some let up to the bad business system of buying beyond one's means of payment, and that foreign merchants and manufacturers would have insisted, long ere this, on some curtailment of credit. But, in spite of crisis, in spite of a depreciated currency, in spite of the suspension of specie payments and an increasing amount of irredeemable bank-notes in circulation, the volume of foreign imports has continued to expand. Indeed, it has seemed to increase in inverse ratio to the ability of the country to meet the differences.

EXPANSION OF ARGENTINE TRADE.

The trade tables of the last ten years, placed in juxtaposition, tell the tale of Argentine book-keeping without the necessity of comment.

Table showing the balance of trade against the country.

Year.	Imports.	Exports.	Balance against the country.
1880.....	\$45,535,880	\$58,380,787	.....
1881.....	55,755,927	57,938,272	.....
1882.....	61,266,044	60,388,929	\$907,115
1883.....	80,435,828	60,207,976	20,227,852
1884.....	94,056,144	68,029,836	26,026,308
1885.....	92,221,969	83,879,100	8,342,869
1886.....	95,408,745	69,834,841	25,573,904
1887.....	117,352,125	84,421,820	32,930,305
1888.....	128,412,110	100,111,903	28,300,207
1889.....	164,569,884	122,815,057	41,754,817

The facts are even worse than the above figures would indicate, since, as I have heretofore stated, the exports for 1888 and 1889 are given in paper instead of gold; so that the exports of 1888, reduced to gold at an average of 130 per cent. premium, actually represents only about \$80,000,000, leaving a balance against the country for that year of about \$48,000,000; while the exports of 1889, reduced to gold at an average of 162 per cent. premium, actually represents only about \$75,000,000, leaving a balance against the country for 1889 of about \$80,000,000. Such figures seem almost astounding, considering the limited resources and population of the country; and yet there they stand in black and white, embarrassing and weakening the credit of the nation.

It is not strange that the import trade of the Argentine Republic, with such tremendous balances every year to be met or tided over, is in a deplorable condition. It is not strange, with the premium on gold going higher and higher and the value of paper currency growing less and less, that the commercial situation has become almost desperate.

THE MONETARY PRESSURE.

The only wonder is that the merchants of the country, with such a pressure upon their business, have stood the crisis thus far as well as they have. It is true that even the strongest houses have had to ask extensions, and that many of the smaller ones, being in such good company, have even given up trying to make remittances against their foreign liabilities; yet, in the midst of it all, up to the present time there have been but few out-and-out failures. But, with trade at a stand-still, unable to make remittances and afraid to sell their goods on time, as heretofore, it seems that a collapse must yet come, sooner or later, and thus compel a general liquidation.

CONDITION OF THE EXPORT TRADE.

The hope, out of all these economic troubles, has been that the exports—for the country has been “booming” in every department of production—would show an increase in excess of importation, and thus ease up

the unfortunate situation. I am surprised that the productive resources of the nation have not made a better showing during the last few years. The country has seemed to be developing on such a grand scale, with so many new cattle and sheep *estancias* opened up in the outside "camps" and such an annually increasing breadth of land planted in corn and wheat, that there was reason to expect a corresponding increase in the exports of both the agricultural and the pastoral industry. But a failure of the crop of 1889 quite balanced the gain in the shipments of wool. In the latter there was a gain of \$11,851,168 over the previous year, but in wheat there was a decrease of \$6,652,168 over the shipments of 1888; and thus, if there was encouraging increase in one item, there was corresponding loss in another. And though the figures, given in depreciated currency, show that the exports of 1889 were \$22,703,154 greater than those of the previous year, yet, when reduced to gold, they were at least \$5,000,000 less.

Thus the expectation, in which so many Argentine economists have been indulging, that the surplus products of the country were going to be amply sufficient to pay for the millions of dollars of luxuries annually brought to the river Plate from Europe has thus far utterly failed. But the coming harvest, the coming wool clip, may be better. It looks at present as though they would be, and our hopes are all now intently watching the shearing and the harvest. These may not alone be sufficient to save the situation, but they would greatly ease up the strain.

TRADE WITH THE UNITED STATES.

The trade of the Argentine Republic with the United States has, in common with that of Germany, Belgium, France, and Great Britain, been feeling the stimulus of the late "boom" and business expansion; and the returns, as we have already seen, show an unprecedented increase over those of any previous year. For the purposes of comparison I repeat the figures since 1879:

Year.	Imports.	Exports.	Total.
1879.....	\$3,921,379	\$3,917,676	\$7,839,055
1880.....	3,224,743	5,126,499	8,351,242
1881.....	4,268,110	4,035,714	8,303,824
1882.....	5,094,764	2,956,582	8,051,346
1883.....	4,933,054	3,510,574	8,443,628
1884.....	7,454,832	4,064,848	11,519,680
1885.....	7,006,719	5,563,841	12,570,560
1886.....	7,673,284	3,580,406	11,253,690
1887.....	11,004,553	5,938,808	16,943,361
1888.....	9,909,895	6,665,520	16,575,415
1889.....	16,801,790	7,726,691	24,528,481

Here we have an increase of \$6,891,855 in imports, an increase of \$1,061,171 in exports, and an increase of \$7,953,026 in total volume of trade, over the figures of 1888, to say nothing of what is credited to other countries.

Imports.—While it is impossible to give the exact figures of our trade with the Argentine Republic, owing to the fact that what comes through British and German steamers is not credited to us, yet, as the best I can get, I give from the returns of the national statistical office the following detailed tables of our imports for the year 1889. In truth, however, the imports from the United States should be several millions of dollars more than the Argentine custom-houses make them.

Table showing imports from the United States.

Articles.	Quantity.	Official value.
Olive oil.....kilograms...	9,089	\$2,709
Olives.....do.....	5,800	870
Starch.....do.....	203,942	27,991
Refined sugar.....do.....	28,225	5,363
Cod-fish.....do.....	20,570	3,472
Coffee.....do.....	20,503	6,254
Meat.....do.....	1,682	849
Barley.....do.....	2,556	2,556
Chocolate.....do.....	105	57
Confectionery.....do.....	1,386	629
Spices and condiments.....do.....	3,000	120
Flour.....do.....	240	58
Hams.....do.....	1,450	783
Tongues.....do.....	1,685	816
Butter.....do.....	12,581	6,542
Lard.....do.....	300,049	93,016
Bread and crackers.....do.....	2,945	884
Preserved fish.....do.....	106,853	42,685
Cheese.....do.....	430	258
Tea.....do.....	460	460
Wheat.....do.....	1,004,500	40,180
Mineral water, bottled.....dozens.....	1,102	2,204
Alcohol and liquors, bottled.....do.....	515	2,170
Beer:		
Bottled.....do.....	2,250	5,242
In casks.....liters.....	21,200	3,604
Brandy, bottled.....dozens.....	120	720
Whisky, bottled.....do.....	353	1,482
Vermouth, bottled.....do.....	25	150
Wines:		
Bottled.....do.....	196	780
In casks.....liters.....	768	77
Cigars:		
Havana.....kilograms.....	2,401	14,409
Other kinds.....do.....	534	708
Cigarettes.....do.....	2,654	5,308
Tobacco:		
Leaf—		
Havana.....do.....	2,068	1,241
Other kinds.....do.....	284,787	95,781
Cut—		
Havana.....do.....	225	180
Other kinds.....do.....	6,319	3,161
Raw cotton.....do.....	4,900	294
Pack-thread.....do.....	860	603
Baize.....do.....	134	294
Tow.....do.....	4,780	860
Blankets.....do.....	1,219	2,194

Table showing imports from the United States—Continued.

Articles.	Quantity.	Official value.
Thread :		
Cotton (spools).....dozens...	5,000	\$2,000
Silk.....kilograms...	209	2,938
Impermeable goods.....do.....	2,694	1,349
*Rope and cordage.....do.....	51,059	9,902
Canvas.....do.....	410,365	312,821
Lamp wicks.....do.....	46,235	36,089
Houselines.....do.....	940,628	383,457
Cotton goods.....do.....	169,917	125,767
Hempen goods.....do.....	526	263
Linen goods.....do.....	24	76
Woolen goods.....do.....	200	600
Jute goods.....do.....	1,375	207
Prints.....do.....	27,864	25,078
Chimenes.....dozens...	509	962
Drawers.....kilograms...	4	12
Gloves, other than kid.....do.....	3,000	4,500
Pocket-handkerchiefs.....do.....	82	246
Ready-made clothing.....do.....		730
Silk hats.....dozens...	11	220
Various manufactured articles :		
Cotton.....do.....		1,898
Linen.....do.....		276
Wool.....do.....		296
Mixed goods.....do.....		12,812
Silk.....do.....		50
Acids, all kinds.....do.....		334
Linseed-oil.....kilograms...	9,175	909
Oil of other kinds.....do.....		123,132
Tar.....kilograms...	100	5
Spirits of turpentine.....do.....	356,478	46,252
Varnish.....do.....	36,081	28,865
Benzine.....do.....	41,010	6,153
Bitumen.....do.....	46,930	13,303
Chlorate of lime.....do.....	14,680	736
Carbocate of soda.....do.....	1,876	56
Glue.....do.....	90	14
Paint :		
Crude.....do.....	25,967	2,152
Prepared.....do.....	35,705	3,861
Fire-works.....do.....	55,495	19,424
Essences.....do.....		3,721
Specific for curing sheep scab.....do.....		17,154
Soap :		
Common.....kilograms...	2,630	694
Perfumed.....do.....	1,778	1,787
Prepared medicines.....do.....		62,949
Perfumery.....do.....		12,823
Resin.....kilograms...	1,373,065	34,328
Potash.....do.....	11,707	1,760
Pharmaceutical products.....do.....		4,760
Chemical products.....do.....		58,340
Salt.....hectoliters...	200	124
Calcined soda.....kilograms...	29,000	870
Printing-ink.....do.....	250	55
Vaseline.....do.....	3,609	1,934
Lumber :		
Pine.....square meters...	16,371,029	6,956,940
Walnut.....do.....	71,160	71,160

Table showing imports from the United States—Continued.

Articles.	Quantity.	Official value.
Lumber—Continued.		
Oak.....square meters...	52,509	\$37,010
Cedar.....do.....	45,224	15,034
Mahogany.....do.....	990	1,684
Other kinds.....do.....	173,990	81,336
Trunks and boxes.....number...	6,549	1,752
Carriages and carts.....do.....	352	50,628
Shooks and staves.....do.....	6,332	13,507
Musical instruments of wood.....		2,442
Launches and boats.....number...	7	3,960
Furniture.....		281,827
Pianos.....number...	33	8,150
Other articles of wood.....		193,904
Writing-paper.....kilograms..	5,070	2,036
Wall-paper.....do.....	5,885	3,727
Wrapping-paper.....do.....	326	58
Litmus paper.....reams...	6,708	17,430
Playing-cards.....gross...	3	45
Pasteboard.....kilograms...	4,504	1,802
Papier-maché articles.....		445
Other articles of paper.....		2,985
Blank books.....kilograms...	1,168	814
Books, printed.....do.....	50,994	50,994
Other printed matter.....do.....	161	126
Lithographs, engravings, etc.....		672
Boots and shoes.....dozens...	4	52
Valises and satchels.....number...	155	783
Leather goods in general.....		19,707
Tanned skins.....		14,281
Arms and accouterments.....		20,282
Wire:		
Fencing.....kilograms	44,472	2,190
Other kinds.....do.....	3,400	476
Needles.....thousands...	56	675
Kitchen utensils.....		366,769
Nails.....kilograms...	35,254	6,785
Iron safes.....do.....	6,339	1,397
Stoves and piping.....do.....	165,898	16,590
Cutlery.....		2,076
Iron ornamental articles.....		9,150
Iron, unmanufactured.....kilograms...	6,156,495	224,734
Tools and implements, artisan and domestic.....		148,262
Iron furniture.....		25,730
Iron joists and columns.....kilograms...	141,180	5,647
Plows.....number...	32,336	237,717
Husking machines.....do.....	1,024	8,227
Mowers.....kilograms...	10,954	5,460
Rakes.....do.....	8,654	2,859
Plowshares.....do.....	64,863	18,548
Planters.....number...	8	234
Reapers.....do.....	3,506	504,330
Threshing machines.....do.....	7	4,480
Spades, shovels, and picks.....kilograms...	384,096	83,158
Other agricultural implements.....		81,873
Pumps.....number...	633	5,716
Sewing-machines.....do.....	5,323	82,546
Printing and lithographing presses.....do.....	36	2,174
Other machinery and engines.....		1,220,402
Other manufactures of iron.....		880,868

Table showing imports from the United States—Continued.

Articles.	Quantity.	Official value.
Materials for public works :		
Railways.....		\$1,444,614
Gas.....		35,252
Mining.....		10,490
Electric light.....		53,784
Sewerage works.....		77,761
Madero port works.....		10,000
Tram-ways.....		29,820
La Plata public works.....		198,196
Jewelry.....		3,298
Copper and bronze, manufactured.....		1,951
Scientific instruments.....		3,193
Tin :		
Unmanufactured.....kilograms...	59,159	4,766
Manufactured.....		675
Iron hoops.....		28,242
Watches :		
Gold.....number...	6	180
Other metals.....do...	1,542	4,203
Clocks.....do...	14,985	26,519
Lead, manufactured.....		753
Weights and scales.....number...	1,682	13,320
Zinc, manufactured.....		73
Other metals and their manufactures.....		600
Glassware.....		6,755
Lamps.....		51,938
Earthenware.....		2,443
Marble, alabaster, etc.....		5,751
Grindstones.....kilograms...	67,712	2,828
Building stone.....		7,367
Porcelain ware.....		3,122
Hydraulic cement.....kilograms...	3,080,501	62,610
Candles.....do...	7,420	2,226
Coal.....do...	49,764,310	432,239
Coke.....do...	273,044	4,952
Kerosene.....liters...	14,887,260	744,363
Fancy articles.....		818
Cork.....kilograms...	270	81
Sponges.....do...	874	1,748
Gutta-percha articles.....		1,893
Toys.....		5,570
Church decorations.....		540
Straw goods.....		3,693
Seeds.....kilograms...	60	20
Apothecary apparatus.....		16,351
Office materials.....		2,481
Miscellaneous articles.....		237,527
Total.....		16,801,730

As showing wherein our imports to the Argentine Republic have increased and wherein they have diminished, I reproduce the following comparison of figures for the last six years:

Articles.	1884.	1885.	1886.	1887.	1888.	1889.
Turpentine.....	\$34,430	\$25,152	\$48,933	\$110,546	\$50,031	\$46,252
Starch.....	49,448	45,438	41,071	42,879	5,848	27,991
Agricultural implements.....	136,530	611,002	455,450	580,891	662,090	946,888
Lamps, gas fixtures, etc.....	66,159	86,596	69,404	70,508	77,915	61,136
Lumber.....	2,817,146	3,453,719	3,352,620	6,117,847	4,964,140	7,162,194
Furniture.....	92,517	129,792	289,246	248,396	406,248	281,827
Cotton goods.....	178,178	200,697	238,716	366,695	179,991	150,845
Hardware, etc.....	240,694	226,073	542,824	562,447	739,667	1,827,756
Kerosene.....	866,741	341,891	707,220	1,009,540	611,067	744,363
Railway materials and machinery, etc.....	834,168	392,119	165,020	248,940	650,663	2,782,319
Drugs, chemicals, etc.....	62,355	82,224	342,658	369,118	394,537	443,538
Hempen and woolen goods....	189,136	165,534	417,207	172,455	325,954	753,647
Tobacco and cigars.....	208,420	98,542	77,856	100,903	58,394	120,748

In all these principal lines of goods the returns show an increase, except in furniture, gas fixtures, and cotton goods; and the reason that the latter appear to have decreased is that large quantities of these imports have arrived here by steamer via Liverpool or Bremen, and hence, in the custom-house statistics, are credited to either England or Germany. But the principal increase in imports from the United States has been in agricultural implements and machinery, in lumber, in hardware, and in materials and machinery for public works. It will be observed that we have also done considerable business in lard, dried fish, pianos, patent medicines, resin, and carriages; and, when it appeared that the country was short of breadstuffs, we sent out 1,005 tons of wheat. We are credited with having imported cheese to the value \$258 and hams to the value of \$783, when it is known that the great proportion of these two articles actually comes from the United States.

Exports.—The crisis has had no effect upon the exports to the United States of Argentine products. On the contrary it has quite stimulated such trade, for the reason that hides and wool are purchased with paper currency and sold in the United States for gold, there always being a margin between the two for satisfactory shipments. It is on this account that the exports have gone up to such unprecedented figures, the increase over last year's shipments amounting to \$1,061,171.

The following is a comparative table of the value of the principal articles of export for the last six years:

Articles.	1884.	1885.	1886.	1887.	1888.	1889.
Ox and cow hides.....	\$2,462,244	\$2,384,087	\$1,764,810	\$3,696,235	\$4,487,714	\$4,026,885
Wool.....	602,637	1,187,155	911,082	1,200,190	794,205	2,042,506
Goat-skins.....	161,143	955,428	234,938	342,324	622,204	649,774
Hair.....	244,643	182,713	184,964	270,696	239,774	249,302

Table showing exports to the United States.

Articles.	Quantity.	Official value.
Horses and mares.....number...	13	\$195
Cattle horns.....kilograms...	26, 172	4, 151
Hair.....do.....	386, 514	249, 302
Skins:		
Goat.....do.....	826, 684	649, 774
Kid.....do.....	319	517
Sheep.....do.....	472	148
Hides:		
Ox and cow—		
Dry.....number...	1, 144, 593	3, 992, 448
Salted.....do.....	13, 700	32, 880
Horse.....do.....	811	1, 557
Hide cuttings.....kilograms...	132, 308	8, 072
Wool, unwashed.....do.....	5, 106, 264	2, 042, 506
Bran.....do.....	200	6
Peas.....do.....	1, 080	32
Barley.....do.....	100	3
Linseed.....do.....	6, 755, 263	385, 050
Corn.....do.....	960	29
Potatoes.....do.....	25, 650	1, 026
Hay.....do.....	9, 800	274
Beans.....do.....	4, 500	225
Wheat.....do.....	578, 133	40, 469
Sugar.....do.....	5, 005	650
Preserved meat.....do.....	13, 296	1, 197
Macaroni.....do.....	10, 530	2, 106
Biscuits and crackers.....do.....	62, 623	5, 637
Flour.....do.....	16, 930	2, 573
Butter.....do.....	283	113
Wine, native.....liters...	1, 720	275
Cheese.....kilograms...	183	37
Tallow.....do.....	315	57
Jerked beef.....do.....	1, 050	154
Tripes.....do.....	23, 000	920
Vegetable carbon.....hectoliters...	2, 500	2, 500
Auriferous sand.....kilograms...	3, 920	666
Skins:		
Carpincho.....number...	46, 242	69, 825
Nutria.....kilograms...	23, 400	30, 420
All others.....do.....		6, 076
Ostrich feathers.....kilograms...	26, 865	63, 939
Bones and bone-ash.....do.....	4, 491, 930	106, 609
Old iron.....do.....	625, 750	12, 515
Honey.....do.....	50	6
Salt.....hectoliters...	570	353
Dried blood.....kilograms...	98, 852	2, 566
Various articles of national production.....		8, 195
Various articles re-exported.....		238
Total.....		7, 726, 691

The total shipments of dry ox and cow hides from the Argentine Republic for 1889 were 2,424,596 in number, of which 1,144,593 went to the United States. The quantity of Cordoba, or carpet, wools which was sent to Boston mills during 1889 was 5,106,264 kilograms—nearly the entire clip of the interior provinces. It also appears that, while the entire exports of flaxseed were 28,195 tons, only 6,755 tons were sent to the United States. A new branch

of exports to the United States has, during the last year, been inaugurated here, that of salted sausage coverings; and the business promises to be successful. In other lines the exports to the United States are so trivial as to require no special notice at this time.

OUTLOOK FOR AMERICAN TRADE.

The conditions of our trade with the Argentine Republic continue as heretofore. We are still without regular steam-ship communication between the two countries; we are still without proper banking facilities; we are still without distinctive North American business houses. Whatever comes from us to the river Plate either comes by the tedious and uncertain transport of sailing vessels or indirectly in steamers via Bremen or Liverpool, and it comes, not because we have American merchants here who are laboring to build up and increase the trade between the two countries, but because English and other foreign merchants find it to their profit to deal in American goods.

The recent Pan-American Convention at Washington, at which various measures looking to closer commercial relations between the United States and the countries of South America were discussed, has had, I think, a beneficial effect here in Buenos Ayres, as showing at least our good intentions and our aspirations. The newspapers here duly paraded the scheme for an international bank, and the criticisms in reference to it were generally favorable. The prospect of direct steam communication is hailed as the forerunner of better trade understandings with the Argentine Republic. The same may be said of the project of uniting the three Americas by an uninterrupted line of railway. Indeed, the Argentine Congress has already approved the measure and appointed its quota of engineers to study the subject.

All these things, of course, are mere auxiliary measures to smooth and make plain the way to a greater and more satisfactory commerce between the two countries, and can only have an indirect effect in promoting trade. That must come from an actual demand down here for our products and an actual want on our part for Argentine raw materials. Any and all plans which tend to stimulate these two objects will assist in bringing the river Plate and the United States into closer commercial relations.

Just now, however, the times are most unfortunate for any attempts in this direction. Business, at the present time, is so paralyzed in the Argentine Republic that there has quite ceased to be the necessary demand; and credit has become so shaken, if not broken down, that it is difficult to know whom to trust. Indeed, business confidence, especially in the foreign trade, has, for the present, quite ceased to exist.

GENERAL BUSINESS PROSPECTS.

Under these circumstances it would seem hardly worth while for me to go into detailed exhibits to show in what special classes of goods we might increase our trade or in what particular lines of exports we might be able to

open a new market. On the contrary, I think it is better for me to say that just at the present time the more careful our merchants and manufacturers can be in filling orders and the more emphatic they may be in refusing credits the fewer losses they will incur and the fewer bad debts they will have to transfer to the account of profit and loss. Indeed, the merchants of the Argentine Republic—even the best of them—are now struggling under the weight of the bad business methods which they have been following. Suffering from the long credits which they have heretofore given their customers and pushed now by the crisis and the depression to close up the credits they have heretofore so generously received from their correspondents abroad, the only safe course for all parties is to restrict orders to the sheerest necessities of trade and, instead of contracting additional obligations, to liquidate in every possible manner those which they may still have outstanding. Otherwise I may not be able to predict all the dire results which may ensue, both to merchants here and to creditors abroad. Indeed, as it is, it would seem that a general liquidation is almost unavoidable; and, until commercial transactions once more stand upon a solid gold basis, I do not think that business in the Argentine Republic can be considered as either satisfactory or safe. The ordeal may appear hard, but just now every thing seems to be tending in that direction.

GENERAL PARALYSIS OF CREDIT.

The truth is the Argentine Republic is suffering from a paralysis of credit. It is the reaction from a too great expansion of credit. A crisis like that through which the country has been passing for the last few years can not be terminated by a mere change in the administration of public affairs. It can not be brought to an end even by the most efficient measures of financial reform that Congress or the new Government may adopt. These may direct, but they can not put a stop to, the business chaos into which, by bad and dishonest methods, the country has been plunged. The crisis must go on to its legitimate end. It must work itself out. The "fool's paradise" in which the Argentine people have been so complacently living for the last few years must be wiped out of existence. Inflation must give place to "hard pan." The fictitious values which were placed upon every thing to be bought or to be sold must be superseded by real values. There must be a general shrinkage commensurate with the inflation, and, until that shall have taken place, it will be wise for all parties concerned to keep aloof from Argentine markets.

It has been the general boast among those who were pushing on the "boom" that this was an "exceptional country," and that the ordinary laws of trade, currency, and banking, however requisite to be followed in such countries as England or the United States, had no significance or applicability in the Argentine Republic. Here, it was insisted, all manner of violations of economic principles could be practiced with impunity, and the country would flourish by the outrage. The present prostrate condition of both public and private credit shows the inherent fallacy of such an assumption.

I only fear that the country will for a long time have to walk in the valley of humiliation and endure a protracted period of business and financial depression before it will again be able to hold up its head and present that buoyant and triumphant look which it has heretofore so proudly worn.

TRADE RETURNS FOR 1890.

It may be, however, that the trade of the country is already on the turn for the better; that the excess of imports over exports, which has heretofore so assisted to embarrass the situation, will no longer be permitted to exist. At least the trade returns for the first nine months of 1890, which have just been published by the statistical office, not only show no inconsiderable reduction in the volume of imports, but such an increase in that of exports that the balance of the trade, for the first time in ten years, is once more in favor of the Argentine Republic. I hasten, as the only re-assuring portion of my report, to give the gratifying figures.

The following are imports and exports to September 30, 1890, compared with the corresponding period of the previous year:

Description.	1889.	1890.
Imports	\$121,987,474	\$115,903,947
Exports	246,754,077	174,021,472

Here is a decrease of \$6,083,527 in imports and an increase of \$58,117,525 in exports so far this year, making a total balance for the last nine months of \$64,200,052 in favor of the Argentine Republic.

Imports and exports.—The following table gives the imports and exports of each country for the period of nine months above mentioned :

Country.	Imports.	Exports.
Germany.....	\$9,159,828	\$22,529,833
West Indies.....		1,411,553
Belgium.....	8,414,445	23,149,167
Bolivia.....	34,792	244,045
Brazil.....	2,636,530	16,386,643
Chili.....	34,012	1,759,045
Spain.....	3,090,963	3,633,534
United States.....	7,560,686	9,777,810
France.....	15,473,173	45,665,689
Italy.....	6,102,716	4,820,693
Holland.....	606,977	333,486
Paraguay.....	1,250,864	575,553
Portugal.....	81,300	839,594
Great Britain.....	49,350,608	31,666,844
Norway and Sweden.....	141,747	138,506
Uruguay.....	6,157,225	9,360,408
Countries not designated.....	5,808,081	1,799,069
Total.....	115,903,947	174,021,472

Increase of the exports.—This gratifying exhibit of the exports of the country—the more so, on account of the general business depression—may be divided into the following categories :

Products.	Value.	Products.	Value.
Pastoral industry.....	\$107,516,618	Mining industry.....	\$524,764
Agriculture.....	44,614,774	The chase (pelts and ostrich feathers).....	617,947
Industrial (frozen meat, jerked beef, flour, etc.).....	14,922,963	Unenumerated articles.....	4,918,864
Timber.....	911,542	Total.....	174,022,472

If the Argentine Republic will only keep on in this line, there may be hope of financial improvement sooner than has been expected.

ARGENTINE TARIFF FOR 1891.

The necessities of the Government, rather than any consideration of protection, induced the recent National Congress to make a very large increase in the rate of duty on a considerable number of articles.

I translate the following most important sections of the law:

IMPORT DUTIES.

ARTICLE I. All foreign merchandise imported for consumption shall pay a duty of 25 per cent. on its valuation in deposit, except as follows :

(1) Cigars of all kinds, snuff, objects of art and fancy; carriages, finished or unfinished; harness, reins and bits for same, ready-made clothing, confections, hats, shoes in general; furniture, finished or in pieces; chocolate, cheese, butter and lard, fish and meats, and fruits preserved in any form, which shall pay a duty of 60 per cent.

(2) Tobacco of all kinds, which shall pay a duty of 55 per cent.

(3) Arms and accouterments, powder for sporting purposes, ammunition, cartridge shells, all kinds of perfumery, which shall pay a duty of 50 per cent.

(4) Book covers of all kinds, matches (other than wax), fire-crackers, prepared yerba maté, which shall pay a duty of 45 per cent.

(5) All silk and mixed goods, lace and lace trimmings, insertings, gilt wire, and leather in general, which shall pay a duty of 40 per cent.

(6) Paving stone, curbing, trotting horses, which shall pay a duty of 30 per cent.

(7) Linens, brambants, oxfords, satinets, bindings, cotton ticking, cotton drills, chintz goods, calicoes, rice, farina, and dynamite, which shall pay a duty of 15 per cent.

(8) Iron and steel, not galvanized, in sheets, ingots, or bars; white pine and spruce, unworked; hoops, all kinds of writing and printing paper, hydraulic cement, and iron beams and pillars, which shall pay a duty of 10 per cent.

(9) Canvas and pack-cloth, jewelry, sewing and embroidery silks, every instrument or utensil with a handle or adorned with gold or silver, presses, utensils and materials which serve exclusively for printing (with the exception of types), lithographic presses, all kinds of agricultural or industrial machinery; steam, gas, and electrical engines; detached pieces for repairing machinery, twine and wire in carrots for binding, sulphuric acid, sulphate of lime, tin, tin composition, lead, zinc in ingots or bars, which shall pay a duty of 5 per cent.

(10) Precious stones, which shall pay a duty of 2 per cent.

(11) The following specific duties, to wit:

Articles.	Duty.	Articles.	Duty.
Starch.....per kilogram...	\$0.09	Beer or cider, in bottles.....per liter...	\$0.15
Coffee.....do.....	.08	Brandy, gin, anis, kirsch, bitters, etc.:	
Macaroni.....do.....	.09	In casks.....per liter...	.25
Crackers and biscuits.....do.....	.15	In bottles.....do.....	.30
Flour and corn meal.....do.....	.05	Liquors of all kinds, to 25°, in bottles*.do.....	.30
Shelled corn.....do.....	.05	Kerosene.....do.....	.05
Tea of all qualities.....do.....	.30	Stearine or paraffine candles..per kilogram...	.18
Sugar:		Stearine.....do.....	.14
Not refined.....do.....	.07	Playing-cards of all kinds.....per gross...	40.00
Refined.....do.....	.09	Wax matches.....per kilogram...	.50
Wine?		Straw paper or other varieties for bags or	
Common, in casks.....per liter...	.08	for furring, paper bags, and colored pa-	
Fine, in casks.....do.....	.25	per.....per kilogram...	.15
In bottles, of whatever quality.....do.....	.25	Hats:	
Alcohol:		Silk.....each...	2.50
In casks, not exceeding 30°.....do.....	.15	Felt.....do.....	1.00
Bottled.....do.....	.25	Wool.....do.....	.50

* Of greater strength, in bottles, in proportion.

All articles of weight which have two or more coverings or wraps shall pay the specific duty on the immediate covering, except tea, which shall pay according to net weight.

ART. 2. The following articles shall be imported free of duty, to wit: White sand (de Fontainebleau), plows; wire of iron or steel to Nos. 12 and 13, respectively; breeding animals, whether sheep, cows, bulls, hogs, or horses; cotton threads for looms, quicksilver, sulphur; boats in general, rigged and unrigged; drills for mining, up to 75 meters in length; benzine, stone-coal and charcoal, iron pipes (not galvanized) of 75 centimeters in diameter, wooden or iron casks for tunnelling, frames for casks of 2 kilograms, corks, shooks for barrels, specifics for curing scab in sheep; cases, boxes, etc., for packing preserved meats; fresh fruits, dynamite, guides and torches for mines, glycerine for industrial purposes, books in paper or rustic binding, school books, locomotives, fire-brick, hops, steam-engines, machinery and materials for gas-lights, corn on the cob, tools and furniture of immigrants, coined money, materials for tram and railway tracks, machinery for the preparation of meats for export by any modern system, nitrate of soda, gold-dust, gold in bars or grains, vegetable fiber, fresh fish, silver in bars, plants, especial powder for mines, wheels for railway or tram cars, seeds for planting, wheat, molding earth, school furniture and supplies asked for by the provincial governments, engines and machinery for new manufacturing establishments.

No article shall be exempt from duty which is not expressly named in this law.

ART. 3. There shall be no duties on exports, except in the case of old iron, which shall pay an export duty of \$5 per ton.

By a supplemental law an additional duty of 1 per cent. on the valuation is assessed on all articles imported for consumption.

Warehouse charges remain as they were under the law of 1889.

REVENUE AND EXPENDITURES.

The estimates of the minister of finance placed the national revenues at \$60,224,000. They reached to \$72,903,756, against \$57,110,734 in 1888.

The following table gives the sources of revenue for 1889:

Sources of revenue.	Amount.	Sources of revenue.	Amount.
Importations	\$46,610,018	Judicial deposits.....	\$81,620
Warehousing.....	1,136,434	Receipts from—	
Stamped paper	4,380,201	Central Argentine Railway stock..	560,128
Stamps and seals	255,051	Andine Railway stock.....	236,029
Licenses	1,530,736	National Bank stock.....	3,612,003
City taxes of Buenos Ayres.....	3,147,404	Tax on bank-notes.....	984,803
Post-office.....	1,400,066	Port and mole dues.....	849,085
National telegraphs.....	607,969	Sundries	7,221,393
Light-houses	207,801		
Sanitary visits.....	73,115	Total	72,903,756
Timber-cutting permits.....	8,820		

The general appropriations for the support of the Government, not including appropriations under special laws, were as follows:

Department.	Amount.	Department.	Amount.
Interior	\$15,616,733	War.....	\$8,310,781
Foreign relations.....	1,446,120	Navy	2,908,712
Finance.....	24,745,572	Total	61,785,746
Justice, worship, and education.....	8,757,828		

The estimates for the present year are the same as for the last, and the amount of the appropriations also remains the same.

In the face of these figures it might have been supposed that, under ordinary circumstances and in a state of profound peace, the financial condition of the Argentine Republic would be all that could be desired; that it is not so, however, is only too true. The affairs of the nation for a series of years have been under the control of unskillful or unscrupulous politicians. They have used their positions, not for the best interests of the State, but for their personal profit. Instead of limiting the Government to do the work for which all governments are instituted among men, it is notorious that the late public authorities made use of it and of its credit to promote enterprises which should have been left to individual capital; to assist particular schemes which should have remained in the hands of private parties; to float free banks all over the country based on a paper capital, and thus flood the avenues of trade with depreciated bank-notes; to loan money or issue cédulas on bond and mortgage on a false system of valuation, and, generally, to “boom” the country by a general inflation of prices and values, which were purely fictitious and, in the nature of things, could not long continue. We all know the result—financial chaos and confusion, revolution and political overturnings. In the midst of all this, if any one can, just at present, tell the exact condition of the national finances, he has not yet come to the front. Various “authoritative” statements appear from time to time, but none of the figures agree with each other.

FOREIGN DEBT OF THE NATION.

In regard to the foreign bonded debt of the nation, that is supposed to remain at about the figures of a year ago. Various efforts looking to a new loan have been made during the year, and, indeed, some of them are still in the hands of the foreign money-lenders; but thus far the terms of contract have not been agreed upon. In my last annual report, on the authority of Mr. Agote's tables, I gave the foreign debt of the nation at \$129,018,762. Mr. Latzina, in his statistical report, now states it at \$102,313,035, while the President of the Republic, in his late message to Congress, figures it as follows :

At 6 per cent. interest.....	\$1,703,016
At 5 per cent. interest.....	60,994,962
At 4½ per cent. interest.....	45,899,784
At 3½ per cent. interest.....	13,270,633
At 3 per cent. interest.....	414,792
Total.....	122,283,176

But the President goes on to say that—

The public funds bearing 4½ per cent. interest which the guarantied national banks have deposited in the bank inspector's office do not figure in the above sum total of the bonded debt, because said debt has no amortization and is really not in circulation.

The idea that national bonds held as a guaranty or security are not to be counted as a part of the public debt is rather novel, to say the least. The total amount of such bonds is uncertain, but enough were deposited to guaranty about \$200,000,000 of national bank-notes.

INTERNAL INDEBTEDNESS OF THE NATION.

There is the same uncertainty in amount of what is known as the Argentine internal debt. A year ago Mr. Agote stated it at \$207,322,480. The statistical tables of Mr. Latzina put it at \$192,846,798, and the President, in his last message, gives the amount at \$201,153,197.

TOTAL DEBT OF THE ARGENTINE REPUBLIC.

Taking the President's figures, the total debt of the nation on the 31st of December, 1889, not including the amount of bonds deposited to secure the free banks, was as follows :

Amount payable abroad.....	\$122,283,176
Amount payable at home.....	201,153,197
Total.....	323,436,373

The difference, however, in the status of these debts is that, while the former calls for gold, the latter can be liquidated in the currency of the country.

The amount of the appropriation made by Congress last year to meet the service of the public debt was \$17,842,760; for the present year it is the same.

PROVINCIAL DEBT ASSUMED BY THE NATION.

Had the Argentine Government no further charge than that of providing for the service of its own indebtedness, the situation would seem to be without any immediate embarrassment; but the various provinces, following the national example, have of late years also been presenting themselves in the money centers of Europe as eager borrowers. Though lacking in population and the visible elements of wealth, they saw how easy it was, by parading their advantages and opportunities for investment to the world, to obtain fabulous sums on bond and mortgage, and with the proceeds they went into the business of free banking with a recklessness which the money-lenders ever pandered to. What sums they raised and what sums they squandered by these means is not fully known to outsiders; but Mr. Agote, in a report to the Government a year ago, figured the foreign indebtedness of the different provinces at \$193,577,582. There is now little or nothing to show for these loans; the banks they organized have been "sucked dry," and the provinces, utterly impecunious, are without the means to meet the service of the interest on their debt.

It would seem that the National Government, in the midst of the crisis, had as much as it could well do to look out for itself; but the new Government of Dr. Peligrini, actuated by a desire to place the credit of the Republic above suspicion, has deliberately assumed the debts of the spend-thrift provinces. The following are the terms of the law just enacted by the Argentine Congress:

The Senate and Chamber of Deputies sanction with force of law, etc.:

ARTICLE 1. In case any province should be unable to meet the service on its foreign debt, the executive power is hereby authorized to take over same after an agreement with the respective provincial government.

ART. 2. All the banks, public works, national bonds, or other values held on proceeds arising from these foreign loans shall fall to the nation.

ART. 3. In the eventuality of the nation taking over the foreign loan of any province, the National Government shall negotiate with the foreign creditors of that province for the conversion of their provincial bonds into national bonds of $4\frac{1}{2}$ per cent. and 1 per cent. accumulative amortization at par. The National Government is hereby authorized to issue the necessary amount of such bonds for conversion purposes.

ART. 4. Henceforward no province or municipality shall have power to contract loans abroad. Should, however, any such foreign loans be contracted, let it be hereby understood that no direct or indirect responsibility on such operations can be attached to the nation, nor shall any protests or any negotiations on this head be countenanced by the National Government.

ART. 5. The national executive shall inform Congress next session of the use it has made of this law.

ART. 6. Let this be communicated, etc.

The reasoning of the new President in favor of the law is so unique that as a matter of general interest I give his message to Congress in full:

The executive power is at present engaged in a study of the general condition of the provinces, with a view to organize elements and resources, in order to raise them from their present prostration and give fresh impetus to their economic and commercial vitality. The

task is slow and arduous, but there are some questions that require an imperious solution to remove obstacles in the way of the Government.

Amongst these, the most serious and pressing is the foreign indebtedness of the provinces, whose obligations on interest and sinking funds are beginning to give rise to well-founded anxiety. Although, strictly speaking, the national executive can not be taxed with any kind of responsibility for loans of a purely local character, it is politic, for the sake of Argentine credit, which has been steadily upheld always, that the National Government take over the responsibility of these local obligations rather than allow a pretext for unjustifiable outcry and complaints, though they have no legal rights to rest on.

Once again, we shall give to the world this solemn proof of our good faith, even in favor of creditors whose conduct in this regard is not above reproach and who have no plausible right to appeal to the nation to cover acts and protect claims, the responsibility of which lies in the individual profitable operations in such financial adventures. Yet, we must emerge from this situation, and the national executive applies to Congress for authority to negotiate the matter with the local governments and loan-mongers of this category, and apply the national resources, and undertake the responsibilities arising therefrom.

As the honorable gentlemen will see at a glance, the eventualities before us are of too serious a nature not to call for a corrective to avoid any recurrence of a state of affairs that may be well qualified as an utter disaster to our progress—a state of affairs that has compromised our future and the prosperity of the country.

I, therefore, hope that Congress in this instance will sanction a radical measure, such as I propose, putting an end once and for ever to the power of the provinces to contract foreign loans; and, in case of infringement, let it be notorious that all such compacts and obligations, whether contracted at home or abroad, shall be of purely local character; let it be known from this date that in no case shall any claim be allowed on the nation, no responsibility be attached to the Government of the nation.

It will be observed that the law leaves it optional with the provinces whether, in consideration of turning all their assets over to the General Government, they will avail themselves of its offer to assume their bonded indebtedness. The question of autonomy steps in, and some of the provinces are already showing a disposition to question the motives of the national authorities in thus depriving them of their inherent sovereignty or power to govern themselves as they please, subject only to the constitution. In this view, and to avoid complications, Dr. Lopez, minister of finance, now expresses the opinion that it is preferable to let the provinces default, if they can not meet their obligations, and then make the best terms they can with those who hold their bonds. And this will probably be the result.

AMOUNT OF CÉDULAS IN CIRCULATION.

Another burden looming up most ominously is the service of the interest on the millions of cédulas now in circulation, for the payment of which the nation and the province of Buenos Ayres are respectively pledged. A year ago the outstanding amount of these cédulas had reached to \$464,000,000, of which \$300,000,000 in paper were the issue of the Buenos Ayres Hypothecary Bank and \$164,000,000 in gold were the issue of the National Hypothecary Bank. Since then the former has issued \$30,000,000 more, and the National Hypothecary Bank has now just emitted \$40,000,000 more. So that the total amount for which the interest has to be provided

may be roughly stated to be \$530,000,000, an amount which, in view of the present strained condition of both national and provincial affairs, certainly seems large enough to appal the most hopeful financier. It will be borne in mind, however, that, while the respective hypothecary banks must meet the interest accruing on these *cédulas*, they are re-imbursed for the same by the 8 per cent. interest they receive from those whose property has thus been mortgaged at 50 per cent. of its valuation. So long as these parties keep their interest up, there can be no difficulty in meeting the interest on the *cédulas*. Until recently the banks have pretty punctually received their interest and have thus been at all times ready to meet the service of the *cédulas* in circulation. It is known, however, that many persons with heavy mortgages outstanding have been caught in the crash and are no longer in a condition to pay the accruing interest. As the financial situation becomes more and more pronounced, the number of these delinquents must become larger and larger. Of course, the mortgage banks have the alternative of selling at public auction the property mortgaged; but it is notorious that in most cases these mortgages were made when the price of lands was three or four times higher than it is to-day, and, if it should be put up at forced sale, it would scarcely fetch a tithe of the amount for which it was mortgaged, thus leaving the banks, or the Government rather, to make good the difference. Thus far the banks have delayed action in a large number of defaults, in the hope of arranging with the mortgageors; but this grace can not be much longer continued. What will be the end of these complications can not now be foreseen; but if, owing to the depression of values which are now taking place in landed property, there should be a general default, the National Government and the provincial government of Buenos Ayres, which respectively stand ultimately responsible for these *cédulas*, will be left with very heavy loads to carry.

BANK-NOTE CIRCULATION.

And what shall be said of the irredeemable paper currency in circulation, and for the ultimate security of which national bonds are held by the Government? The actual amounts which the guarantied banks have issued no one seems to know, for those institutions, although Government inspectors were placed over them, seem to have been a law unto themselves. A distinctive provision of the national banking law was that all existing banks reorganizing under it, upon receiving the new guarantied notes, should withdraw from circulation and have canceled all their old notes as fast as they were returned to them. But just previous to the resignation of the late President Celman it was discovered that these "free and easy" banks had not only issued the new notes to the full quota to which they were entitled, but that, in defiance of law and by collusion of the national authorities, had actually put in circulation again nearly all the old notes which it was supposed had been canceled. Such a *coup* struck the country aghast and quite shattered what little confidence the public yet had in the national currency;

but to this day a portion of these fraudulent old notes are still kept in circulation and generally received by the people. The accountant-general of the National Government has just published a statement of the amount of bank-notes in circulation under the banking law, of which the following is a summary :

Notes received from printers in Europe.....	\$262,207,000
Less :	
Amount burned.....	\$2,200,000
Still on hand.....	47,105,465
	<u>49,305,465</u>
Total national notes in circulation.....	212,901,535

The report goes on to state the distribution as follows :

Bank.	Amount.	Bank.	Amount.
Banco Aleman Transatlantico.....	\$1,000,000	Provincial banks—Continued.	
Banco Buenos Ayres.....	1,500,000	Rioja.....	\$3,000,000
Banco Italia y Rio de la Plata.....	1,500,000	Catamarca.....	2,390,491
Banco Ingles de Rio Janeiro.....	250,000	San Juan.....	1,656,000
Banco Frances del Rio de la Plata.....	500,000	Corrientes.....	1,588,500
Banco Nacional.....	55,250,325	Mendoza.....	1,240,000
Provincial banks :		San Luis.....	222,000
Buenos Ayres.....	58,350,100	Total.....	198,898,682
Cordoba.....	15,113,796	Deficiency in the treasury.....	2,853
Santa Fé.....	15,091,000	Special emission, according to the law	
Entre Rios.....	6,999,500	of the 6th of September, handed	
Salta.....	4,432,000	over to the National Bank.....	35,000,000
Tucuman.....	4,000,000		
Santiago del Eserto.....	3,766,470	Grand total.....	212,901,535

How much in addition to this has been surreptitiously put in circulation by collusion between ex-President Celman and the banks does not fully appear. At one time it amounted to about \$60,000,000, though some of this has since been burned. The accountant-general says it now amounts to \$35,116,000. At all events, the present irredeemable bank-note circulation in the country can not be less than \$250,000,000.

The National Government, since President Peligrini came into office, has intervened in the examination of a number of the provincial banks, and the disclosures, so far as they have been permitted to see the light, are most scandalous. In some cases the capital has been distributed among a half-dozen or so of favored politicians; in other cases discounts for millions had been made to men of straw, whose names even did not identify them. In another case one man alone figured on the books as having obtained accommodation for upwards of \$6,000,000, and all there was to show for it was his overdue paper. What will be the result of these disclosures yet remains to be seen, but it is understood that the new Government intends to deal with the delinquents to the full extent of the law. Dr. Lopez, the present minister of finance, is a statesman of great strength of character, sterling integrity, and distinguished ability.

THE DRAIN OF GOLD.

With all these complications and embarrassments from excessive over-trading, from insufficient means to meet the service of the national and provincial foreign debts, from the reckless issue of *cédulas*, from the millions of irredeemable depreciated paper in circulation, from other millions of fraudulent currency with which the country is flooded, and with the limited resources left behind by the late President Celman wherewith to devise ways and means to help the country out of its troubles and restore its credit abroad, it will be easily seen that the portfolio of the finance minister is just now neither a sinecure nor a bed of roses. From all these points of view the situation is a most serious one; and, to add to the difficulty, all the while that the Government is trying to secure a reserve of the precious metals there continues to go on a steady drain of gold from the country. It refuses to be retained. It goes to pay debts; it goes to pay interest; and, especially, it goes to pay the dividends of the foreign capital invested in the Argentine Republic. President Peligrini, in a recent published statement, figured that the amount of gold which it was necessary to send out of the country every year to meet the service of the foreign capital invested here was as follows :

Interest on loans (national, provincial, and municipal) and government guaranties.	\$23,750,000
Service of <i>cédulas</i> held abroad.....	15,000,000
Dividends of railways, banks, tram-ways, etc.....	25,000,000
Interest on foreign money employed in commercial operations and remittances of foreign residents.....	12,000,000
Amount of imports over exports, etc.....	80,000,000
Total.....	155,750,000

Is there any wonder, with such a drain of money out of the country, that gold is scarce and dear? Heretofore these requirements were met by means of loans and *cédulas*; but there has come an end to borrowing money, and Argentine *cédulas* have of late become a drug in foreign markets. The premium on gold, which this time last year was quoted on the Bolsa at 130 per cent., gradually hardened during the first months of the present year, and at the time that ex-President Celman retired from office it had touched 206 per cent. Immediately after President Peligrini became the head of the Government it went down to 140 per cent., but since the disclosures showing the wrecked condition of the finances inherited from his predecessor the premium has again shown an upward tendency, and while I write the price is quoted at 190 per cent. With this high premium on gold, of course, debtors are quite precluded from paying their debts abroad. They have, indeed, quite given up trying to and are tacitly waiting for the crisis to spend its fury.

And is there no remedy for this unfortunate state of affairs—no panacea, no medicine to restore health to the financial sickness of the country? President Peligrini, in a recent published interview, frankly says that “the crisis is more serious and alarming than is generally supposed, and it can not be cured by palliatives, external or internal.” This is, I think, the general

opinion of those who have studied the situation. The disease is radical and must run its course. The crisis must exhaust itself. The liquidation, which has commenced, must go on to the end before there can be any improvement. There must be a stringent contraction of the currency. The present irredeemable paper of banks that are actually insolvent, and now worth but little more than 30 cents to the dollar, must somehow be retired from circulation and something must take its place that shall be equal to, and convertible into, gold. The business of the country, which for the last few years has been done on an ascending scale of inflation and fictitious values, must come down again to a specie basis. All this will require sacrifices to be made. It will involve individual losses, perhaps even bankruptcy to not a few; but, until the patient is worse, he will not begin to get better. Many supposed, so soon as Juarez Celman was out of the way and new and trusted men were in power, that the troubles of the country would be over; but the troubles were found to be too deep-seated for that. The best men in the world can not perform miracles. You can not build or rebuild without materials; you can not restore what reckless officials have squandered without adequate means. President Peligrini, upon coming into office bearing the best wishes of the people, and with the best wishes of the country in his heart, at once saw the desperation of the situation—mountains of obligations maturing and scarcely a dollar in the national treasury to meet them. Even the Government reserves had disappeared from their strong boxes. He hoped and wished for contraction, but the emergency was such that it was necessary to ask Congress for an additional issue of \$60,000,000 currency and power to emit \$40,000,000 more of cédulas as the only possible alternative for obtaining provisional means to carry on the Government.

The year closes with most ominous misgivings for what of misfortune and sacrifice is yet in store for the nation, for what of distress and misery may be in store for the people.

VIEWS OF PRESIDENT PELIGRINI.

No more discouraging view of the situation, however, could be taken than that which President Peligrini has himself given utterance to. Indeed, coming from so high and authoritative a source, his words carry a weight and have a significance beyond any thing which I myself would venture to say; and, as showing the true inwardness of the country's troubles, I can not do better than give his opinions in his own language. In an interview with the editor of the *Nacion*, just published, he says:

THE CRISIS.

Editor.—In view of the fact that the crisis is getting worse, as revealed by the rise in the gold premium and stagnation in business, has Your Excellency any objection to tell me frankly what you think of it?

President.—I have a full sense of the duties imposed on me by the financial and economic condition of the country. I believe a ruler should always speak frankly to the people, and I will do so now, though what I have to say is not pleasant.

The finance minister said something of the situation in the Nation, but he did not speak out, being afraid to create alarm; but I consider that, to remedy the evil, its full extent must first be made known. The crisis gets worse and more alarming daily. The situation is most complicated; but few wish to recognize the fact. If we do not all unite to avert the danger, ruin and dishonor will be our lot. The country owes a great deal of money abroad and must pay it. The crisis is worse than I thought, and palliatives are of no use. I will devote all my strength and faculties to the task of reconstruction, but politics are so mixed with finances in this crisis, with the threatened danger of a social crisis, also, that the task is of enormous difficulty; but I am determined to face it. The country owes a great deal at home, as well as abroad; so it has to encounter two liquidations, both most difficult.

INDUSTRIAL STAGNATION.

Industry, commerce, all social classes, production, and consumption are all affected. With gold at 300 wealth melts away, scarcity ensues, then ruin, want, and famine. Life is impossible with gold at such a premium; government can not be carried on; the people, rendered desperate, may rise to secure food, and no power can resist or restrain them. The worst danger ahead is social revolution.

Editor.—And can Your Excellency see no remedy at home or abroad?

President.—The want of unity in our commercial and banking organization precludes a heroic remedy, as mere honest financial administration can not be called such. Private thrift and saving might do something, but could never cure the evil radically.

Even a foreign loan would be purely a temporary expedient; besides, it can not be raised at present, owing to the crisis in the London market; but it won't last long, as they all unite there in such emergencies, but here we do not. Once the English market recovers, the loan and the conversion of cédulas will both be effected. Meanwhile the crisis grows. Personal credit is the base of all our industries; but it is now destroyed, and anæmia has seized the commercial organism. Factories are already being closed, the workmen are without work and without food, and herein lies a great political and social danger. * * *

THE POLITICAL QUESTION.

Editor.—Don't you think that politics are mainly answerable for the present state of things?

President.—Most assuredly. It is not my business, but I say this much: The future President and Vice-President should be eminent national personages, as they have a tough job before them to set the country right. The candidate must be a representative man in every sense, and he should be selected without loss of time. The crisis abyss may open under us at any moment, if all do not join to settle this Presidential question; but your Union Cívico must join, instead of fomenting political agitation. If the crisis gets worse and we can not find help abroad and your Cívicos refuse to join in settling the matter, I will resign before a month is out and hand over the Government to Doctor Derqui, first vice-president of the Senate.

We must all unite to save our country, which was just beginning to assume the position of a great nation. Let us all fling our private ambition to the winds and unite to make her happy and prosperous once more. We are in great danger of disappearing as a civilized nation and falling back to be merely "South America." If we do not first settle the Presidential question, and that soon, we shall be done for and forfeit all respect and consideration. I trust this terrible case will not arise, and that the Presidential question will be settled promptly and to the satisfaction of all parties. * * *

Though certainly this is a most pessimistic view of the country's troubles, it can hardly be said that President Peligrini is not fully informed in regard to the financial and political perils which are threatening the nation.

FAILURE OF BARING BROS. & CO.

And now, just as I am closing my report, a cablegram is flashed across the ocean announcing the suspension of the great banking house of Baring Bros. & Co., of London, which for many years has in great part carried the credit and floated the loans, national and provincial, of the Argentine Republic, and through which nearly all the commercial business of this country with Europe and the United States has been wont to be transacted. The extent or scope of the disaster is not yet fully known; but, from the fact that the house was loaded with bonded indebtedness on which it has not been able to realize and was party to contracts which were ruinous, it is generally believed that, with all the outside assistance it may be able to command, its losses will be enormous, and that it will have to go into liquidation. If so, grievous as is the remedy, it may signify the beginning of the end, and that the general liquidation, which I have just said must come sooner or later before matters can begin to improve, has already commenced. If so, the giving way of Baring Bros. & Co. may ease up the strain on the country and lead the nation gradually down from the inflated palace in which it has been holding high carnival to the safer level of business on a gold basis.

THE OUTLOOK.

Having for the last sixteen years watched the material development of the Argentine Republic and marked its progress to the first rank of South American republics, it has not been a grateful task for me thus to dwell on the misfortunes in business and finance which have overtaken the country and interrupted its prospects. But in so young and vigorous a nation, possessing so many natural elements of wealth, the clouds which now darken the picture must, when their fury be spent, give place once more to brighter days. The future is yet full of hope and of ultimate triumph. Of necessity there must for a while be depression and humiliation; there must be opportunity for reaction and recovery; there must be time for the material forces of the country to work, and time for the strictest economy in the Government and among the people to be practiced and felt. If bad methods have brought on the present financial embarrassments, the bitter experience will suggest better methods for the future. But, with statesman-like patience and hard work and a surrender of all that is fictitious and false, the Argentine Republic will yet grandly come out of all her troubles and take up again the march of progress, which, by an entire disregard of the inexorable laws of political economy, is now for a time so unfortunately interrupted.

E. L. BAKER,
Consul.

UNITED STATES CONSULATE,
Buenos Ayres, November 17, 1890.

CHANGES IN THE URUGUAYAN TARIFF.

REPORT BY CONSUL HILL, OF MONTEVIDEO.

The following is a translation of the law respecting customs duties, sanctioned by the Chambers in the secret sessions held last week, and of the decree regulating the same issued by the ministry of finance:

The Senate and Chamber of Deputies, etc., decree:

ARTICLE 1. From the promulgation of the present law all goods imported from abroad for consumption shall pay an additional duty of 5 per cent. upon their valuation according to the existing tariff, except the goods at present free of duty and those specified in paragraphs 5, 6, and 7 of article 1 of the customs law of January 5, 1888.

ART. 2. From the same date those products of the country specified below shall pay upon their exportation the following specific duties, namely:

Articles.	Duty.	Articles.	Duty.
Wool in general.....per 100 kilos...	\$1. 30	Salted ox-hides.....each...	\$0. 25
Sheep-skins.....do.....	80	Dried ox-hides.....do.....	12
Hair.....do.....	1. 70	Salted horse-hides.....do.....	12
Grease, tallow, and animal oils.....do.....	50	Dried horse-hides.....do.....	06
Jerked beef.....do.....	40	Dried calf and nonato skins...per 100 kilos...	1. 00
Preserved meat and tongues.....do.....	1. 00	Seal skins.....each...	16
Hoofs.....do.....	25	Horns.....per M...	2. 50
Ashes and bones.....per 1,000 kilos...	60	Meat extract.....per kilo...	10
Animal manure.....do.....	60		

MINISTRY OF FINANCE.

The executive power, regulating the customs law of this date, resolves and decrees:

ARTICLE 1. The direction-general of customs shall liquidate and carry out the account, separately, of the duty of 5 per cent. additional on importation created by the said law.

ART. 2. The permits to dispatch already passed shall be liquidated without the additional duty of 5 per cent.

Those permits now in process, but which have not been passed in the deposit, shall be null.

The permits of disembarkation to dispatch or of direct dispatch which are in process, but have not been passed by the *resguardo*, shall be null.

Those which have been entirely or partially passed by the *resguardo* shall be liquidated without the additional 5 per cent. so far as they are already fulfilled, but new permits must be taken out for the remainder, subject to the aforesaid additional 5 per cent.

ART. 3. The permits for exportation of products of the country, the embarkation of which has been passed by the *resguardo*, shall be exempt from the respective duty created by the law now regulated.

Those of which the embarkation has not been effected shall be null.

Those which have been effected in part shall not pay the additional duties on the part already embarked, but new permits must be obtained for the remainder, subject to duty.

ART. 4. The regulations and other dispositions relative to exportation of products of the country, in force before the promulgation of the law of January 30, 1888, and which have not been expressly derogated, remain in full force and vigor.

FRANK D. HILL,

Consul.

UNITED STATES CONSULATE,

Montevideo, October 10, 1890.

THE MOVEMENTS OF POPULATION TO CITIES.

REPORT BY CONSUL RYDER, OF COPENHAGEN.

A review of some preliminary statistical tables of the census taken in this Kingdom on the 1st of February last gives an insight into the proportional distribution of the population between the town and rural districts.

The yearly average of the growth of the population is there shown to have been during the decade of 1880-'90, as follows:

	Per cent.
Copenhagen.....	2.89
Townships:	
Of Jutland.....	2.60
Of the islands.....	1.89
Rural districts:	
Of Jutland.....	0.45
Of the islands.....	0.31
For the Kingdom at large.....	0.99

This average growth is, first of all, of special interest when brought into comparison with the average percentages of previous periods. Dividing the last fifty years into three periods—say the twenty years from 1840 to 1860 and from 1860 to 1880, together with the decade of 1880-'90—it is seen that both in the capital and in the different townships the increase of the population has steadily been of more and more pronounced character, whilst the percentage of growth in the rural districts has constantly been on the decline.

The following table more fully expresses this proportional increase in the towns and decrease in the rural districts of the population, viz:

Period.	Town.	Country.
	Per cent.	Per cent.
1840.....	20.3	79.7
1860.....	22.4	77.6
1880.....	26.2	73.8
1890.....	30.5	69.5

The population of the Kingdom is now found to be distributed in the following manner, viz: In the towns, 738,000, and 1,435,000 in the rural districts; in other words, of the aggregate population of Denmark in 1890, 34 per cent. are found dwelling in the towns and 66 per cent. in the rural districts, whereas fifty years ago the town population was only one-fifth of the aggregate population of the Kingdom, whilst at the present time it is over one-third.

In the last ten years 137,000 inhabitants have taken their departure from the rural districts, 64,000 of whom have been received by the towns, the remaining 73,000 having emigrated to foreign lands; and of these 137,000, the rural districts in the islands have contributed 55,000 and the Jutland

rural districts 82,000, which is a relatively larger share for Jutland, as the rural population in that part of the Kingdom in 1890 was only slightly in excess of that in the islands. It is only in the northern and western districts of Jutland that the rural population has met with any noteworthy increase in the last decade.

It will not be necessary to give further figures; the foregoing afford a good illustration of the complaints, so often made by the farming classes, of the great difficulty in these days of procuring the required number of laboring hands, and in this country, as well as in other European lands, one looks with deep concern at this gradual dispeopling of the country, whilst the towns are increasing their population beyond all limits. This excessive shifting of the population which has been going on for the last fifty years is also a matter of no little anxiety to radical reformers, as well as conservative statesmen, in all countries. This problem is in no wise confined to this Kingdom; it is more or less prevailing in all the old countries. In France, where the general population has for some years been nearly stationary, the towns have been largely increasing their numbers at the expense of the country. In Germany, during the five years 1880-'85, the rural population has been decreased by 150,000, whilst the towns have met with an increase of 1,500,000 inhabitants. In towns of over 2,000 inhabitants, according to the last census returns, in the Netherlands there were dwelling 80 per cent. of the population; in Belgium, 64 per cent.; in Great Britain and Ireland, 45 per cent.; in Spain and Italy, 43 per cent.; in Germany, 40 per cent.; and in France, 39 per cent. A transition from country to town life, as substantiated by these figures, must naturally affect the social physiognomy of a nation. It is a transition from regular and healthy labor, under tranquil conditions, to the specialties of factory life, with its crises, strikes, etc., and the attendant restlessness of town life. The hands who direct their steps toward the towns are also, for the most part, individuals in the most robust and energetic stage of life, it being found that the class from twenty to forty years of age is much more numerous in the towns than in the rural districts, where, on the other hand, the predominating classes are those of the earliest and latest stages of life.

HENRY B. RYDER,

Consul.

UNITED STATES CONSULATE,

Copenhagen, November 19, 1890.

IRON AND HARDWARE INDUSTRY OF AUSTRALIA.

REPORT BY CONSUL GRIFFIN, OF SYDNEY.

Little or nothing has been done towards utilizing the rich deposits of iron ores so widely diffused throughout New South Wales, with the exception of the works of the Eskbank Iron Company, at Lithgow Valley, 96 miles west from Sydney. These works were originated in 1875, and the company have

on their property iron ore, coal, fire-clay, and molders' sand. There is no other establishment now engaged in the manufacture of iron from the ores, and even at Eskbank the operations are very small, and do not exceed in value \$97,330 per annum, and are confined principally to rerolling old rails and working up scrap and other old iron into bars, rods, nails, etc. The iron-works established at Mittagong, 77 miles to the south of Sydney, at a heavy outlay of capital, and which at one time promised profitable returns, have not been in work for some time. There are, of course, a large number of iron-foundries in the colony engaged in the manufacture of steam-engines, boilers, railway plant, agricultural machinery, farming implements, etc., but the material used is imported. During the year 1889 there were 350 establishments engaged in various kinds of iron-work in New South Wales, giving employment to between 8,000 and 9,000 hands, with a larger number of establishments and hands in the colony of Victoria, where more attention is paid to manufactures of all kinds than in New South Wales.

The total value of iron and iron manufactures imported into the whole of Australia is nearly \$30,172,300 per annum. Nearly all these imports are admitted free into New South Wales. The exceptions were for the year 1889:

Articles.	Rate of duty per ton.	Quantity on which duty was paid.
		Tons.
Galvanized iron in bars, sheets, corrugated.....	\$9. 73	15,131
Iron and steel wire.....	4. 86	11,781
Galvanized iron manufactures (except anchors).....	14. 60	.....

However, in Victoria the customs duties on these imports are very heavy. In that colony iron manufactures pay a duty of 35 per cent. ad valorem. Bar and rod iron are admitted free, but almost every thing else in the way of iron and iron manufactures is taxed. Victoria has also taken steps to prevent the export of her scrap-iron by putting a tax of \$7.30 per ton on all scrap and old iron exported.

I am indebted to Mr. T. A. Coghlan, Government statistician of New South Wales, for the following table showing the value of iron manufactures imported into Australasia for each year from 1884 to 1888, inclusive :

Colony.	1884.	1885.	1886.	1887.	1888.
New South Wales.....	\$9,455,157	\$10,871,250	\$7,121,374	\$5,943,612	\$9,932,628
Victoria.....	5,420,648	5,534,505	5,586,076	6,690,751	9,260,687
Queensland.....	3,649,438	3,240,725	3,140,725	2,853,730	4,471,481
South Australia.....	1,767,583	1,841,883	1,497,825	1,682,384	2,314,785
Tasmania.....	1,179,019	936,767	1,194,803	942,145	989,496
New Zealand.....	4,818,614	3,678,909	2,993,464	3,125,388	3,152,714

IRON ORES.

New South Wales, with the exception of New Zealand, is the only colony in the Australasian group that possesses extensive iron deposits. These deposits are found at Wallerawang, Lithgow, Mittagong, Mount Lambie, Berri-ma, Illawarra, and in various other parts of the colony. Both coal and lime are found in most places near at hand. At Wallerawang there are immense masses and veins of magnetite, with garnet iron-stones. There are also rich veins of red and brown hematite. Professor Liveridge, of the Sydney University, who recently made analyses of the iron ores of New South Wales, states that the magnetite ores average 40.87 per cent. of metallic iron, the garnet iron-stones 21 per cent., the brown hematites from 37.84 to 51.82 per cent., and the clay bands 49.28 to 56 per cent. of iron. Vast deposits of brown hematite exist near the junction of the Hawkesbury and Wianamatta formations. Large deposits of magnetite are found on the Bogan and Lachlan rivers. It is sometimes stated by promoters of iron companies that the ores on certain properties contain as much as 90 per cent. of the metal; but it is rarely that large masses of ore are found so pure, and it is more than probable that the ore thus advertised does not contain more than 40 per cent. of the metal. On the Southern Railway line there are extensive deposits of brown hematite, with coal-measures near to them. This, of course, adds to their value, as it is a matter of great importance to have the two together for smelting purposes, for, if either the coal or iron has to be carried any distance, the cost of freight and cartage, which is very high in Australia, would render it impossible to manufacture iron at remunerative rates. Brown hematite ore is also found in the rich coal-fields of Bulli and other parts of the Illawarra district. The ore at Bulli, as well as at Eskbank and Lithgow, is very rich and averages over 50 per cent. of iron. Bog iron ore exists in considerable quantities at Mittagong. It is usually of a porous, ochery nature.

The following analysis of ore from that part has been made by Mr. C. Watt, late Government analyst:

	Per cent.
Hydroscopic moisture	0.35
Chemically combined water	2.12
Peroxide of iron	85.91
Protoxide of iron	5.59
Silica	3.80
Alumina	2.18
Total	*99.95

This is equal to 47.86 per cent. in metallic iron. •

Red and yellow ochers are closely allied to this ore and are usually associated with it, but they contain more or less earthy matter. Mittagong is situated in one of the richest mineral and agricultural districts in New South Wales. It lies at an altitude of 2,069 feet above the sea. The district

* Also traces of protoxide of manganese, lime, phosphoric oxide (P_2O_5), and sulphuric oxide (SO_2).

throughout abounds in deposits of iron, coal, shale, manganese, lime, and fire-clay. The shale near Mittagong contains a higher percentage of kerosene than any other hitherto found. About 15 miles from the town are situated the Australian Kerosene and Mineral Company's works. The company occupies 2,000 acres of land, upon which there is a proved seam estimated to contain 200,000,000 tons of kerosene shale, besides an unlimited quantity of coal and other minerals.

Iron ore exists at Berrima, in the same county as Mittagong, and it is said to be even richer than that found at Mittagong.

The following is an analysis of brown hematite found at Berrima :

	Per cent.
Hydroscopic moisture.....	15.47
Iron peroxide.....	82.54
Alumina.....	0.84
Phosphoric oxide.....	0.63
Insoluble in acids.....	0.52

This is equal to 57.8 per cent. in metallic iron.

The Government, on account of the favorable reports of the iron seams at Mittagong and other parts of Camden County, have taken steps to ascertain the number of iron deposits and to define their position, extent, and contents, and full particulars as to their ownership. Various specimens of iron from this county were analyzed by the Government analyst during the year 1889, and they yielded from 40 to 62 per cent. of iron.

Iron ore is found near Bathurst, one of the most important of the inland cities of New South Wales.

The following is an analysis of a specimen of magnetite from Brown Creek, Bathurst :

	Per cent.
Water lost at 100° C. and water combined.....	0.13
Iron :	
Peroxide.....	60.48
Protoxide.....	18.67
Alumina.....	14.22
Silica.....	6.50
Total.....	*100.00

This is equal to 56.85 per cent. in metallic iron.

Red hematite (specular iron) is also found in abundance in various parts of the colony, particularly in the so-called "red hills," occurring in the New England tin districts. It is also found near Sydney and in the Illawarra district. A specimen of this ore gave 90.55 per cent. of iron sesquioxide, its specific gravity being 4.49. Continuous seams of magnetite from 30 to 40 feet in thickness have been opened up in the Illawarra district, near the railroad, with an abundant supply of coal, lime, and clay bands.

Iron pyrites also exists in many parts of the colony. It is found in well-formed crystals in the Manilla and Namoi rivers, County Darling. Inter-

* There were traces of phosphoric oxide.

esting concretions occur in the Sunny Corner silver fields, on Mitchell's Creek, in which the vein stuff is black, green, brown, and red. Some of these veins are from 40 to 50 feet in width. Professor Liveridge states that in some respects these concretions of iron pyrites resemble the calcareous concretions of the London clay known as septaria and used in the manufacture of hydraulic cement. Well-formed cubes, partially decomposed in brown hematite, are common in many deposits with gold, and are known to the miners by the name of the "devil's dice." All the specimens of iron pyrites which Professor Liveridge examined contained traces of gold, and in some instances gold was found in considerable quantities. Fluted rhombic crystals occur with arsenical and common pyrites (auriferous) on the Sholehaven River.

There are various other kinds of iron of more or less commercial value found throughout the colony. Chrome iron exists in abundance at Tamworth and on the Gwydir River and its tributaries; also at Gordon Brook, Armidale, etc. At Tamworth there is a vein of chrome iron 40 feet thick, specimens of which showed, upon analysis, 64.72 per cent. of chromium sesquioxide and 21.11 per cent. of iron protoxide. Professor Liveridge states that this vein could be easily and profitably worked. The chief obstacle, however, to the working of chromium ore, indeed, of any other kind of iron in the colony, is the high cost of labor.

Rich seams of magnetic iron ore are found at the iron-stone mountain, Port Stephens, where there is a magnificent harbor, 80 miles northeast of Sydney. Mr. T. W. E. David, Government geological surveyor of New South Wales, has recently made an interesting and valuable report on the Port Stephens iron-stone mountain. He states that the prospecting board have made a number of openings for the purpose of following the ore bed in straight to the dip. The extent of the dip has not yet been defined. The samples obtained from it show a large percentage of metal. These, however, were obtained from the outcrop, which are usually somewhat richer in iron than those taken from a depth, owing to the iron in the surface ore having become concentrated through the action of the weather, which leads to a constant dissolving and reprecipitation of iron near the surface. In this process the impurities of the ore (sand, clay, etc.) follow it a short distance down toward the dip, and, consequently, enrich it. The report says:

There is a fall of between 300 and 400 feet from the various outcrops of the iron-stone bed here to sea-level. The greater part of the country intervening between the iron-stone mountain and the Karua wharf is either flat or undulating, becoming rocky and broken until in the immediate vicinity of the iron-stone. There is abundance of good timber in the locality, so that there would be little difficulty in constructing a tram line or railway line from the mountain to the Karua River. The formation in which the iron-stone occurs is the "rhacopteris beds," which are probably of lower carboniferous age, and are certainly older and underlie the Greta coal-measures, and have never yet themselves been proved to contain productive coal seams. The outcrop of the bed was traced by me for over a quarter of a mile, being bounded on the north by an intrusive felstone, while to the south it apparently thins out. It is more than probable that the prospecting trenches will prove it to extend still further in this direction. It is also nearly certain that its continuation still further north will be discovered on the north

side of the dike of felsstone, as the same bed of iron ore is known to occur at Bowral and to the west and east of Stroud, the bed dipping under Stroud from the west, then rising again to the surface to the east of Stroud, so that it lies in a complete trough or basin. A partial section of the bed, in two places where it is obtainable in trenches already cut, shows that its thickness varies from 3 to 4 feet. The dip is southwesterly at from 20° to 30° . Assuming that the bed maintains an average thickness of 3 feet for a distance of, say, a quarter of a mile in the dip, and that the average yield of ore is, say, one-quarter less than it is at the surface, the total quantity of metallic iron here would be, roughly, 800,000 tons, equal to 5,000 tons per acre. This estimate is, of course, only very approximate, and is subject to correction when a truer estimate can be formed upon the completion of the present prospecting operations. At the iron-stone mountain the ore bed dips towards the west, but at a short distance to the west the dip changes persistently to the east, so that the iron ore should rise to the surface again in this direction, and it would be advisable to prospect here for its western outcrop.

The report further states :

The iron-stone mountain is interbedded with thick masses of volcanic sandstone (arkose), composed of tufaceous material ejected during volcanic eruptions, intermixed with sand. The ore bed has evidently been formed by the mechanical concentration of the minute crystals of magnetic iron contained in the tufaceous sandstone by the agency of sea-water acting on a beach, which has thus produced a beach wash of magnetic iron-sand of lower carboniferous age, similar to that which is at present being formed at Taranaki, in New Zealand. That this is the true origin of this bed of iron ore is also proved by the presence of titanic acid, the analysis showing that there is as much as 7.30 per cent. of titanic acid present, which is equal to from 16 to 17 per cent. of titaniferous iron. The analysis by Mr. J. C. H. Mingaye, F. C. S., shows that there is 18.70 per cent. of silica and 5.28 per cent. of alumina present. The presence of so much silica would certainly make the ore a refractory one to smelt, and its treatment would be rendered still more difficult by the presence of so much titaniferous iron. There is, however, a considerable quantity of earthy limestone and a small bed of pure limestone close to the deposit of magnetic iron-stone, and this would serve as a flux should it be decided to attempt to smelt the iron-stone on the ground. The value of this deposit will depend on (1) its yield of metallic iron at a depth (this will be proved by the analysis hereafter to be made of the ore at a depth as exposed in the ends of the cuttings, for which aid has been granted out of the prospecting vote); (2) its average thickness, as will be proved by the trenches, for which similar aid has been given; (3) on the possibility of smelting successfully an ore which contains so much silica and titanic acid, so as to produce from it a marketable quality of iron.

The richness of the New South Wales iron ores has been for a long time well known and acknowledged by experts; but the high cost of labor, as previously mentioned, is a serious obstacle in the way of working the deposits economically, and then, in addition, there is the heavy expense connected with the erection of smelting works. Moreover, the value of iron, on account of its bulk, is small when compared with that of other metals; but, notwithstanding these obstacles, several syndicates have been formed here and in England for the purpose of working the ores. Mr. J. Mitchell, member of the New South Wales Parliament, who visited England at the beginning of the present year, has just succeeded in forming a syndicate in London for the purpose of working the ores at Wallerawang and Wollongong. Mr. Mitchell states that much of the ore at those places is richer than that imported into England from Spain. When iron-works were first started in New South Wales, the cost of coal at the mines was \$15 per ton. It can be obtained at

97 cents per ton now. Mr. Mitchell says that no aid will be required from the Government either by bonuses, import duties, or privileges of any kind whatever, and that the usual colonial rate of wages will be paid to the miners.

Mr. Mitchell, while in Europe, secured the services of a Scotch iron expert for the purpose of reporting upon the iron-making capabilities of New South Wales. This expert, after visiting all the principal places where iron is found, reported very favorably in regard to them. He said that he was fully satisfied that iron could be manufactured at a profit without reducing wages or interfering with the eight-hour system. He does not, however, advise the investment of capital in the industry until a better understanding can be arrived at between capital and labor than at present exists in Australia. There are, however, many here who contend that, leaving the labor question out altogether, it will be impossible to manufacture iron and steel without the assistance of an import tax, which, it is said, should not be less than \$9.73 per ton. Through the help of the duty on wire-netting (\$7.30 a ton) the colony is enabled to manufacture no inconsiderable portion of the wire used here for fencing. It is also claimed that, if this duty were removed, the price of netting would be at least 25 to 30 per cent. higher than it is. The fact is often cited that, when bar-iron is worth only \$38.88 per ton in London, it can not be purchased in Sydney for less than \$63. It is contended that the freight charges are light, and that there is no just reason why the article should command such a high price in a free port. Plates are quoted in London at \$38.88 per ton; the quotation here is from \$65.44 to \$68, and it is said that these prices would not be exceeded if the articles were made here. It is also said that an enormous iron and steel industry has sprung up in the United States that has no parallel in the world, chiefly through the exaction of import duties, which have so cheapened the product that the country is not only able to supply her own wants, but those of her neighbors.

IRON IMPORTS.

The great bulk of iron imports comes from Great Britain, the United States only furnishing a very small quantity. The value of the total imports of iron and steel, exclusive of machinery, hardware, etc., into New South Wales during the year 1889 was \$2,138,278. The subjoined table shows the value of the imports of iron and steel and of galvanized iron and galvanized manufactures into New South Wales for each year from 1885 to 1889, inclusive:

Year.	Iron and steel.	Galvanized iron and manufactures.
1885.....	\$3,300,405	\$2,033,025
1886.....	2,310,695	1,425,485
1887.....	1,497,875	1,371,125
1888.....	2,010,555	2,448,835
1889.....	2,138,278	1,517,240

Of the imports for 1889, \$147,270 consisted of pig-iron, \$596,555 of iron and steel pipes, \$65,975 of other castings; \$706,485 of bar, rod, plate, and sheet iron; \$102,630 of bolts, nuts, rivets, and screws; \$401,345 of other wrought, \$67,945 of iron and steel tanks, \$70,220 of safes and doors, \$512,785 of wire, \$363,930 of galvanized manufactures, and \$15,735 of wire-netting.

HARDWARE.

The value of hardware imported into New South Wales during 1889 was \$2,382,205, against \$2,142,290 for the year 1888. Of the imports for 1889, Great Britain shipped direct to the value of \$1,582,005, besides a considerable quantity by way of Victoria and the other colonies; the United States furnished direct \$396,980. The value of the imports of nails during the same period was \$141,940; of these, Great Britain supplied direct \$75,215 and the United States only \$10,865. The value of the imports of machinery was \$2,313,835, of which Great Britain sent direct \$1,277,365 and the United States \$265,700. The value of agricultural machinery and implements imported was \$333,845, of which \$97,445 came direct from Great Britain and \$28,515 from the United States. The value of fire-arms and ammunition was \$775,920; of these, \$167,615 consisted of guns, of which Great Britain sent \$100,095 and the United States \$34,605. The value of the shot imported was \$55,270, nearly all of which came from Great Britain. A small quantity of shot is made in Victoria, where there is a shot-tower 150 feet high. It was formerly only 80 feet high, but that height was insufficient for the manufacture of chilled shot. A Victorian firm has also undertaken the manufacture of cartridges. The factory is situated at Saltwater River, and is known as the Colonial Ammunition Company. The first samples of their work were delivered to the defense department in Melbourne in October last, and were tested by a board of officers appointed for the purpose. The board, in making their report, said :

A number of rounds were taken indiscriminately and fired by selected shots. At 500 yards four trials of ten rounds each showed a mean deviation of 0.71, 0.87, 0.90, and 1.21 feet, respectively, and at 800 yards one trial of nine rounds gave a mean deviation of 1.94 feet. In comparison with the latter, ten rounds of imperial ammunition were fired by the same shot, and the mean deviation found to be 1.40 feet. The 500-yard range is considered the best for testing either rifles or cartridges, and, though the limit of mean deviation for the latter is not laid down in the musketry regulations, it is fixed for the former at 1.25 feet. As none of the tests at this distance gave a greater mean deviation than 1.21 feet, and as the day was unsuitable—the wind being very strong and variable both in strength and direction—the results were satisfactory. Twenty rounds were opened and examined in detail, in all of which the bullet was found to be from 2 to 3 grains under the prescribed weight (480 grains); but this was not considered of serious importance. In six of the twenty cartridges the charge of powder was correct (85 grains), while five were outside the limit of 1 grain allowed each way by the board as a reasonable margin. Twenty rounds of imperial and ten rounds of Kynoch's ammunition were also examined by way of comparison. Of the former, only one round was found to be outside the margin mentioned regarding the powder, while the bullets were practically the same as in the colonial. Four of the Kynoch cartridges contained the exact quantity of powder (85 grains), the remaining four varying only half a grain. The

new company's cases were not so well rolled as the others mentioned, and there appeared a defect in the lining or in the lacquer used. Neither were the packets so well done up as the imperial packets. In concluding, the board was of opinion that the cartridges were serviceable for ordinary military purposes, but that the defects mentioned should be pointed out and their remedy insisted upon in future supplies. These recommendations have been concurred in by the military commandant.

The value of the imports of cutlery into New South Wales during 1889 was \$216,815. Of this amount, only \$3,930 came direct from the United States. There ought to be a steadily increased demand for American cutlery in these colonies, and several firms who have imported such articles from the United States speak in high terms of them, especially of the American shears and scissors. Indeed, their superiority, to judge from the following extract from the *London Engineer*, is readily acknowledged in England. The *Engineer* says:

A trade which at one time was regarded as one of the dying industries is again reviving rapidly—that in scissors. German competition has been excessively keen in scissors for domestic use, particularly those in the cheaper qualities. The Americans beat both English and German in the tailors' scissors, which are, perhaps, the most important branch. American-made tailors' scissors are preferred even in Sheffield.

The value of dental tools and material imported during 1889 was \$23,650; of this amount, \$11,260 was received from Great Britain and \$12,290 from the United States. Railway material to the amount of \$491,350 was imported during the same period, the United States contributing only \$14,690, the remainder coming from Great Britain. The value of gas-fittings imported was \$226,175; and of lamp ware \$101,255; of this, \$42,390 was from Great Britain and \$33,195 from the United States. The imports of lamp ware have declined since 1885, when the value was \$189,375; in 1886 they were \$165,680.

Among the articles imported from the United States for which there is a steadily increasing demand mention should be made of spades, shovels, hoes, rakes, vertical and circular saws, carving tools, chisels, planes, ice-clippers, ice-cream freezers, ice-boxes, plated ware, brass castings and rock drills, axes, door hinges, punches, pipe cutters, etc. In regard to axes, it may be well to note here the very fair imitations of American axes by James Howarth & Son; but in small and medium sized axes this firm's manufacture is a long way behind the American ax both in price and quality. The British manufacturers have not yet tried their hands at the deep-cutting groove ax that has been successfully introduced into this market. This pattern of ax is becoming daily more and more popular. It does not bind in the timber, but is easily withdrawn.

LOCOMOTIVES.

The locomotives manufactured in the United States for this colony give very general satisfaction. They not only command the requirements of the railway traffic better than others, but were secured at considerable less cost and in much shorter time than those manufactured in England; but for some

reason the contracts were not renewed, and, when the New South Wales Government advertised for tenders for fifty locomotives about the beginning of the present year, no offers came from the United States; and, after vainly trying to secure their manufacture in the colony, the Government was obliged to accept the offer of an English firm for their manufacture at \$18,250 each delivered in Sydney. Twenty tank-engines have also been ordered from England at a cost of \$13,000 each.

PRICES OF IRON AND HARDWARE.

Notwithstanding the depressed condition of trade and commerce occasioned by the great labor strike, there is a brisk demand for all kinds of iron and hardware. In the early part of the year prices ran up to enormously high figures, amounting to 60 per cent. over those of the corresponding period of 1889. Merchants, however, were somewhat shy of handling either iron or hardware on account of the speculative character of the market. The advance in price, it is said, was not warranted by any natural condition, either of higher cost of production or of excessively reduced stocks. A check was given to this kind of speculation, and the market assumed a healthier tone. The present quotations are as follows: H. B., \$63.26; Nether-ton's, \$65.69; sheet-iron, \$68.13; hoop-iron, \$65.69; fencing wire, \$55.96 for No. 8 and \$58.40 for No. 10; wire nails (4 inch), \$3.77 per cwt. There is no duty charged on nails in New South Wales.

The shipments of large quantities of bar, rod, and other kinds of iron from the United States to London has attracted general attention here, and is thought to be remarkable, especially at a time when there is such a heavy demand in America for iron and steel for the construction of railways and naval vessels.

STEAM COMMUNICATION WITH NEW YORK.

The great length of time required to obtain iron and hardware from the United States by means of the slow-sailing old wooden vessels has induced importers to have their goods sent to London and reshipped from thence to these colonies. Articles shipped in that way do not show in the customs returns and are there set down as British produce. Recently a line of steamships has been established by the Australian and American Shipping Company to sail from New York to Sydney and Melbourne. The voyage will be by way of Cape of Good Hope, and will occupy less time than by way of London. This line of steamers will be of great advantage to the American iron and hardware trade, as importers will not be obliged to put up with the delay and expense of transshipment. It will be difficult at first to obtain a return cargo, and the steamers will probably have to load for intermediate ports and return thence to the United States.

G. W. GRIFFIN,
Consul.

UNITED STATES CONSULATE,
Sydney, November 25, 1890.

No. 124—7.

RUSSIAN TARIFF AND INDUSTRIES.*

REPORT BY CONSUL-GENERAL CRAWFORD, OF ST. PETERSBURG.

According to recent official publications, Russia possessed in 1887 a total of 21,247 factories, giving a yearly output of 1,120,250,000 rubles, or \$560,125,000. In keeping an account of omissions, which are inevitable in such calculations, the industries placed under the excise system, namely, the exploitation of mines, the construction of vessels, as well as the small industries, numbering 54,468 establishments in 1887, and the industries in villages, the annual output of Russian industry in its totality amounts to at least \$750,000,000, and more than a million workmen are employed by these factories and various works.

On examining the degree of influence of the tariff on the advance of industry, it appears that this influence is most favorable, as proved by the data found in another official publication, which refers to the Russian manufacturing industry for the period of 1867 to 1888, that is to say, the epoch posterior to the revision of the customs tariffs and to the introduction of duties levied in gold money.

One observes an absolute reduction of production in very few branches of Russian industry, and that reduction is generally found in specialties which had never attained large proportions. To illustrate: The production of candles, tar and turpentine, cast-iron, silver and lead, horse-hair, down, and pencils is decreased, and for the last ten years the production of fire-arms has also decreased, because of the fact that orders made for arms at the three manufacturing establishments of fire-arms of the country have been smaller.

There are also other branches of industry which have not developed in proportion to the increase of population and to that of the Russian railway communications. For instance, stearine, wax, tallow, soap, and cosmetics, in a space of twenty years, have only increased from \$3,750,000 to \$4,000,000. Since 1880 a general decrease of these articles has been observed. There is also little development in the production of matting, joinery, the casting of copper and bells, in jewelry, pottery, articles of leather and papier-maché, cables, carriages, conserves, and vinegar. The manufacture of hats and of musical instruments had advanced up to the year 1879; since then these industries have gradually declined. As seen, these are secondary branches, whereas the principal branches of Russian industry have all made enormous progress during the last twenty years, or since the appearance of the principles of protective tariff.

The protection granted to chemical products and to dye works is not considerable, and still in this space of time this specialty, Poland excluded, has increased from \$2,308,500 to \$7,653,500; and, if the provinces of the Vistula are joined to those of Russia proper, the increase amounts to

* Based upon official statistics and upon a leading article in the *Novia Vremia* (New Times), of St. Petersburg.

\$8,445,000. There is great progress to be seen, also, in the manufacture of saltpeter. Matches have risen from \$228,500 to \$1,824,500; and even wax candles, in view of the decrease of the product of wax, show an important increase. The production of naphtha has increased in twenty-three years from 999,000 poods, or 17,982 tons, to more than 3,600,000 tons, besides \$9,000,000 worth of mineral oil and over 72,000 tons of mineral grease.

The production of sawn timber has more than doubled since 1874, and, including Poland, it amounts to about \$10,750,000. The industry of different metals has also increased; thus, cast-iron has risen from 306,000 tons to 720,000 tons, and silver and lead from 198,000 tons to 630,000 tons. The production of machinery has almost quadrupled, and actually amounts to over \$27,000,000. The result is almost the same in the case of copper and bronze articles, and nails and wire product have increased tenfold during the last twenty years. It is also claimed that the progress of the Russian metallurgical industry is due to the high duties imposed upon foreign products. The production of gold has increased from 59,400 pounds to 77,328 pounds (English); that of platinum, from 3,924 pounds to 5,976 pounds; common salt, from 796,068 tons to 1,271,988 tons; and coal, from 480,528 tons to 5,698,656 tons. Ten years ago Russia produced no manganese, whereas to-day 72,000 tons are produced. The production of cement and alabaster has more than doubled; the result is the same for porcelain and Delft-ware, glassware, crystal, and mirrors.

It is surprising to see how the production of paper pulp has increased in the last ten years, rising from an industry of only \$14,000 to \$344,500, while that of paper has increased from \$2,500,000 to \$8,500,000. Wall-paper has not prospered so well, and still its production has increased from \$203,500 to \$706,500.

If the production of leather has increased only two and a half times, that of India rubber has increased from \$356,000 to \$4,750,000.

One of the most striking features of this question is this great progress in the production of the principal manufactures, for which vast sales exist in Russia, as well as in the bordering countries. The wool manufactories have increased their output during the last twenty years from \$1,250,000 to \$10,000,000; those of woollen tissues have increased their production threefold, or \$18,500,000, and those of woollen cloths from \$17,000,000 to over \$23,000,000. There is also a considerable increase in the manufacture of felt and carpets in the same period of time.

The progress of the cotton industry is still more striking. The cotton-mills have brought their production from \$21,000,000 up to \$66,750,000. The production of cotton tissues has increased from \$15,000,000 to over \$78,000,000, notwithstanding the fact that the number of cotton-mills has fallen during the last ten years from 632 to 339. The production of cotton prints has also increased from \$15,000,000 to \$75,000,000, although the number of mills has fallen from 714 to 311 by means of company consolidations, the larger establishments, here as elsewhere, gradually absorbing the

smaller. The product of wadding is to-day six times greater than it was fifteen years ago.

The cotton industry in no way affects the industry of flax, a leading Russian product. The production of flax yarn in the Russian provinces alone has increased in ten years from \$2,500,000 to \$6,500,000, and the number of workmen employed has doubled, whereas in the Kingdom of Poland this industry has increased 100 per cent. in the same time. Great progress is also to be noticed in the production of oil-cloth, of fancy trimming, and this entire line of goods. The production of silk fabric also increased from \$2,000,000 to \$6,250,000.

The question as to whether the progress of manufacturing industry obtained by a protective tariff prevents the advance of agricultural industry has been many times discussed, and it is generally believed—in fact, proved—by some economists that many of the branches of rural economy have improved under this system. The production of flour, for instance, has increased within the last ten years from \$38,500,000 to \$82,500,000; that of oat-meal has quadrupled. There is also a large increase in the production of starch, yeast, cheese, chicory, mustard, macaroni, mineral waters, and potash, while butter has increased from \$3,500,000 to \$7,000,000, and confections from \$3,000,000 to \$5,000,000. But the triumph of the protective system in Russia is the sugar industry, which did not exist at all fifty years ago, and which in 1885 consumed 6,120,000 tons of beet roots and employed 93,395 workmen. Formerly foreign sugar cost double the price that Russian sugar now costs.

A very important question, that of the duties to be levied on agricultural machines imported, is now under discussion by the tariff committee. This committee has had placed before it several projects concerning the raising of the tariff on these machines, which at present pay a duty of 70 copecks, or about 47 cents, per pood, or 36 pounds.

Mr. Afanassiew would have the tariff raised to 1.40 gold rubles per pood. The committee of the Moscow Exchange has petitioned that the tariff be raised to 2.50 and 3.50 gold rubles per pood, the latter duty to be levied on all machines weighing less than 3,600 pounds, so that it would affect for the greatest part the implements of first necessity required for agriculture.

It appears that all the agricultural societies questioned on this subject, as well as the exchange committees of the towns of Kharkov, Odessa, Riga, and Revel, have pronounced themselves against any eventual increase in the tariff on agricultural machines.

According to calculations made by the Agricultural Society of Poltava, the increase in the tariff proposed by Mr. Afanassiew would be equivalent to a tax on rural economy of $2\frac{1}{2}$ copecks per bushel of cereals or 15 copecks per acre of land plowed. The tariff on agricultural machines, as it is now, absorbs 6.4 per cent. of the net revenue of land and is equivalent to about three-fourths of the total land-tax. The Free Economic Society considers this imposition as being still more, viz, 206 metallic copecks per pood. If

Mr. Afanassiew's project were adopted, it would amount to 3.41 metallic copecks.

Agriculture is already heavily imposed with the existing tariff. The tariff on scythes alone, which every agricultural laborer must possess, costs the country more than \$1,000,000, as scythes of Russian manufacture are so defective that they are seldom employed.

It would seem from the data given in this report that the high protective tariff system in force for many years past in Russia has naturally improved the condition of agriculture, as well as all other prime industries of the country, so much that the committees of finance and of home industry are said to be seriously discussing the question of raising the existing schedule of duties on imports in the line of every important industry.

J. M. CRAWFORD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
St. Petersburg, November 27, 1890.

COMMERCIAL TRAVELERS IN FOREIGN COUNTRIES.

REPORT BY CONSUL SHERMAN, OF LIVERPOOL.

From official documents, mainly Parliamentary papers, I have gathered the accompanying summary of existing regulations affecting commercial travelers in nearly all parts of the world. And with such a paper it is perhaps well to record a decision, interesting alike to commercial travelers and their employers, given by Lord Justice Lopes in the court of appeal, supreme court of judicature, in July, 1889, and apparently not published in the regular law reports.

The plaintiff agreed with the defendants to introduce customers, the plaintiff to be paid a commission upon all orders executed by the defendants received from such customers and paid for by them. The plaintiff introduces customers. The defendants subsequently dismiss the plaintiff, but execute and are paid for orders from such customers after the dismissal. The judges decided that plaintiff was entitled to all commissions on orders given by customers introduced by him to defendants, executed by the latter and paid for by the customers, although such orders were given after plaintiff ceased to be in defendants' employ. It was also decided that defendants were not bound to pay commissions upon orders obtained from, and paid for by, customers introduced by plaintiff after he, the plaintiff, ceased to be in the defendants' employ.

The question was as to the true construction of certain words in two letters from the defendants to the plaintiff, viz:

As regards your commission, we hereby agree to allow you 1½ per cent. upon all orders executed by us and paid for by the customers arising from your introduction.

Under this agreement the plaintiff introduced customers from 1879 down to February 1, 1888, and a considerable trade resulted to the defendants. The plaintiff was then summarily dismissed, the defendants continuing to do business with his customers and at the same time declining to give him any commission. No claim was raised on this occasion as to the past commission, the only question being whether, under the terms of the agreement, the plaintiff was entitled to commission on business done by the defendants after February 1, 1888, with customers introduced by him before that time, or whether all right to future commissions ceased at the time of his dismissal. The plaintiff contended that, by the terms of the agreement, he was to receive commission in respect of all orders executed by the defendants and paid for by their customers arising from his introduction, not only during the time he was in their employment, but afterwards; that, whatever might justify them in dismissing him—in effect preventing him from introducing new customers after dismissal—he was, and always would be, entitled to commission on all orders executed and paid for by customers introduced previous to dismissal. The fact of introduction was sufficient to entitle him to that.

The defendants, on the other hand, said that this agreement applied only to the time the plaintiff was in their employment, and that, as soon as that employment was terminated, they were no longer liable to pay commissions, even although the orders arose from the introduction of the plaintiff; that it would be a great hardship on the defendants if they were bound during the life of the plaintiff to pay these commissions, the plaintiff having ceased to be in their employment.

Lord Justice Lopes, in giving judgment, said that he was impressed at first by the view that when the agreement terminated it would be a hardship for the defendants to have to account to the plaintiff. The plaintiff's lawyer had said, however, that no such hardship existed, because they were not obliged to execute those orders which arose from the plaintiff's introduction. That suggestion was weighty and cogent, and he had come to the conclusion that the plaintiff was entitled to commission, provided the order arose from his introduction, although the employment had terminated.

From this judgment an appeal was taken to the court of appeal, and there dismissed.

A similar case has just been settled here without going into court. Plaintiff agreed with defendant to introduce customers, for which the former was to be paid by commission. Subsequently defendant dismissed plaintiff, who claimed commission on all orders from customers introduced by him, plaintiff, and executed. Defendant refused to satisfy the claim, but eventually, through the intervention of a solicitor, agreed to pay the commission up to the time of dismissal in satisfaction of all claims. Plaintiff refused this offer, and, finally, defendant paid the commission up to date of issue of writ without reservation.

There are more than sixty thousand commercial travelers in the United Kingdom. In 1845 an institution was founded by them at Pinner for the

"clothing, maintenance, and education of the destitute orphans of deceased, and the children of necessitous, commercial travelers." This institution is supported solely by voluntary contributions, and the sum of \$45,000 is raised annually for its maintenance.

THOS. H. SHERMAN,
Consul.

UNITED STATES CONSULATE,
Liverpool, December 13, 1890.

REGULATIONS AFFECTING COMMERCIAL TRAVELERS.

[Inclosure in Consul Sherman's report.]

GREAT BRITAIN.

In Great Britain commercial travelers, as such, have no fees to pay, and are not required to take out licenses, whether traveling for English or foreign houses. The following particulars as to the regulations respecting the admission of patterns and samples imported by commercial travelers are copied from the imperial tariff for 1890:

"COMMERCIAL TRAVELERS' PATTERNS AND SAMPLES.

"Declaration for the admission, duty free, of patterns and samples imported by commercial travelers, signed at Berlin April 1, 1869.

"Articles liable to duty serving as patterns and samples which are introduced into Great Britain by commercial travelers of the Zollverein states, or into the Zollverein by commercial travelers of Great Britain, or into the United Kingdom by French commercial travelers, or into France or Algeria by commercial travelers of the United Kingdom, shall henceforth be admitted free of duty, subject to the following formalities requisite to insure their being re-exported or placed under bond:

"(1) The officers of customs at any port or place at which the patterns and samples may be imported shall ascertain the amount of duty chargeable thereon. That amount must either be deposited by the commercial traveler at the custom-house in money or ample security must be given for it.

"(2) For the purpose of identification, each separate pattern or sample will, as far as possible, be marked free of expense by the affixing of a stamp or by means of a seal or leaden seal being attached to it.

"(3) A permit, or certificate, shall be given to the importer, which shall contain: (a) A list of the patterns or samples imported, specifying the nature of the goods and also such particular marks as may be proper for the purpose of identification; (b) a statement of the duty chargeable on the patterns or samples, as also whether the amount was deposited in money or whether security was given for it; (c) a statement relative to the manner in which the patterns or samples were marked; (d) the appointment of a period, which, at the utmost, must not exceed twelve months, at the expiration of which, unless it is proved that the patterns or samples have been previously re-exported or placed under bond, the amount of duty deposited or the amount recovered under the security given will be carried to public account.

"(4) Patterns or samples may also be re-exported through any other custom-house than the one through which they were imported.

"(5) If, before the expiration of the appointed time (3 d), the patterns or samples should be presented to the custom-house of any port or place for the purpose of re-exportation or being placed in bond, the officers at such port or place must satisfy themselves by examination whether the articles which are brought to them are the same as those for which the permit of entry was granted. If there are no objections in this respect, the officers will certify the re-

exportation or deposit in bond, and will refund the duty which has been deposited, or will take the necessary steps for discharging the security.

"Samples imported by Swedish, Norwegian, and Austro-Hungarian travelers are permitted to be delivered duty free upon the same conditions as are presented above.

"The board of customs have approved of the following regulations to govern the exportation and subsequent importation free of duty of commercial travelers' duty-paid samples:

"(1) A specification in the usual form is to be made out in duplicate by the exporter and presented to the collector at the port of examination and shipment, containing an inventory of the articles to be exported, specifying the nature, number, quantity, marks, etc., and all such particulars as may be necessary and proper for their identification on return to this country.

"(2) The goods having been duly examined and shipped, the proper officer is to sign both specifications, handing one to the exporter or the person having custody of the goods, to be by him produced and given up to the officers of customs for cancellation on the return of the samples, and filing the second copy for reference.

"If the samples be brought back to this country through a port other than that from which they were exported, they are to be detained pending the production of the duplicate specification from the port of shipment."

AUSTRIA-HUNGARY.

No special license or fees are required from commercial travelers when acting as agents of legally established houses in the United States, but they must show that their employers comply with the laws at home respecting taxes, etc., on their business.

BELGIUM.

Commercial travelers for foreign houses are subject to a license fee of \$4.86. Samples pay the same duty as the merchandise they represent; but certain samples, especially tissues, when too small for other uses, are duty free. If of larger size or whole pieces (shawls, handkerchiefs, cravats, etc.), they must have their market value destroyed by mutilation before admission duty free. Every sample of tissues exceeding 30 centimes in length throughout its whole width is subject to duty. Other samples can be temporarily admitted free, their re-exportation to be insured by compliance with certain requirements

BULGARIA.

No regulations exist.

DENMARK.

(1) Foreign merchants or commission houses are absolutely forbidden to expose for sale or to sell goods or wares outside of Copenhagen or the Danish municipal towns (*Kjøbstæder*) either personally or through travelers.

(2) Even in Copenhagen or the said municipal towns a foreigner is not at liberty to offer or sell goods to other persons than such as are licensed to transact business in such goods, viz, merchants *en gros* (*Grosserere*) or *en détail* (ordinary merchants, *Kjøbmænd*, or other persons that have taken out the necessary licenses), manufacturers, and mechanics, and other licensed traders. To merchants the foreigner may only sell such goods in which such merchants are allowed to trade; to manufacturers, mechanics, and other traders they may only sell such goods as these persons require for their manufactures or trades.

Accordingly, it is absolutely forbidden to sell goods directly to the consumers.

The goods must not be sold in smaller lots than what is reckoned as sale *en gros* (generally not less than \$10.72).

(3) A foreign commercial traveler is bound to apply to the custom-house official at the first custom-house place where he arrives from foreign parts, and before that official to produce certificates from the magistracy at his place of residence, showing whether it is for his own

account or for the account of others that he intends to do business, and, if for other merchants or manufacturers, the certificates must state the names of such other persons or firms.

The custom-house official shall then hand to the traveler a certificate, which he must present to the chief officer of police of the place before making use of it. The certificate is valid only for one year, but may, at the expiration of the year, be exchanged for a new certificate, also running for one year. This new certificate is to be issued by the custom-house officer at the place where the traveler is dwelling at the time when the first certificate expires.

For such certificate and for each renewal of the same the fees are \$42.88. If the traveler represents more than one firm or manufacturer, he has to pay, over and above the \$42.88, a fee of \$21.44 for each such firm or manufacturer.

If the firm is obliged during the lapse of the year in which the certificate is running to change their traveler, a new certificate may be taken out by the new traveler for the remainder of the year without any fees having to be paid.

(4) If the traveler is traveling about with samples, he has to pay the ordinary customs duty on such samples, and the samples are to be shown to the custom-house officer. The same applies to sample books, etc.

(5) On his arrival at any town where the traveler intends doing business, he is to present his certificate to the custom-house officer and to the chief officer of police.

(6) The above enactments also apply to Danish subjects who are traveling for the account of foreigners.

(7) If, before showing the certificate to the custom-house officer and the chief officer of police, any commercial traveler should transact any business, he is liable to be fined \$4.29. For other offenses against the above enactments (especially for transacting business without taking out a certificate) the traveler is to be fined: the first time, \$17.15; the second time, \$25.73; the third time, \$35.38. If he offends a fourth time, he is both fined \$35.38, and, moreover, loses his right of doing business, and at the instance of the police he may be sent out of the country. Besides the above penalties, a traveler may be fined for offenses against the customs laws or for unlicensed trading.

Samples of goods that are not presented as the law directs are to be confiscated.

In default of payment of the fines the traveler may be imprisoned as a subsidiary punishment, according to the ordinary rules of the Danish law with regard to the non-payment of fines.

FRANCE.

No regulations exist; commercial travelers of every nationality carry on their business without interference of any kind and without any payment of fees or licenses.

GERMANY.

PROVISIONS RELATING TO FOREIGN MERCHANTS, COMMERCIAL TRAVELERS, ETC., PUBLISHED IN THE SUPPLEMENT TO THE CENTRAL GAZETTE OF THE GERMAN EMPIRE OF NOVEMBER 3, 1883.

I.—Generally speaking.

(1) Foreigners who desire to trade while moving from place to place require a special license for that purpose.

(2) Foreigners who desire to carry on ordinary frontier commerce by the exclusive sale of raw materials appertaining to agriculture or forestry, horticulture, etc., or of poultry or bees only, are exempted from the obligation provided in the above clause; such a trade may, however, be forbidden should any of the conditions mentioned in sections 57 (Nos. 1 to 4), 57a, or 57b (Nos. 2 to 4) of the commercial code present itself.

(3) As regards the carrying on of any trade while moving from place to place, as well as regards the issue, refusal, or withdrawal of the special license, the provisions laid down in chapter 3 of the commercial code shall be enforced.

(4) The issue of a traveling trade license shall be refused, if there is no necessity for making out such licenses for the conduct of the trade in question within the district of the authorities (applied to), or as soon as such licenses may have been issued or extended (*vide* No. 6) in numbers corresponding to the conditions of the district over which the said authorities have the administration.

In addition to the above, as regards the vocation of tinker, workers in lead and wires, etc., organ-grinders, and bagpipe players, a license may only be issued to such persons as can prove that they received a license for the same business during the preceding year. Gypsies shall always be refused such licenses.

(5) Foreigners who have either not yet reached the age of twenty-one or whose characters are subjects of suspicion to the police are not to be allowed to carry on an itinerant trade.

A license which has been issued may be withdrawn, should such considerations be raised after its issue.

(6) The traveling trade license allows the possessor, after paying the fees imposed by the Government of the country, to carry on his trade while moving from place to place within the district of the authorities who issued it. In order to carry on his trade in another district, his license must be extended by the authorities of the district in question. Such extension shall be refused if [same as in No. 4].

Section 58* of the commercial code shall be applied, as well as the above No. 5, paragraph 2, in case of withdrawal of the license.

The right of expelling a foreigner from any district remains unaltered by these provisions.

(7) The fact of a foreigner's possessing no domicile in the country shall not be considered as a reason for refusing to issue him a traveling trade license or for refusing to extend it when issued.

(8) Such licenses may be drawn up, as well as extended, for a shorter time than the calendar year or for a specified number of days within the calendar year.

(9) The licenses will be drawn up in the manner indicated under heading III.

(10) Any person who, while carrying on an itinerant trade from place to place, desires to be accompanied by another person must obtain the permission thereof of the authorities who issued or extended his license. Such permission will be notified upon the license, with an accurate description of the persons in question.

Persons with regard to whom the authorities do not receive satisfactory replies to the questions to be put to their master shall not be allowed to accompany the latter. This provision applies equally to the cases of a German subject accompanying a foreign tradesman or of a foreign subject accompanying a German tradesman.

Permission to be accompanied by persons of the opposite sex may be refused, even though none of the reasons for refusal given under Nos. 3 to 5 should be present, except in cases of married persons or of own children or grandchildren over the age of twenty-one.

(11) Measures taken upon the basis of these provisions, including, also, a refusal to approve a catalogue of books or any printed matter (by section 56, paragraph 4, of the commercial code it is provided that all traveling tradesmen selling books or other printed matter must submit a catalogue of the literature they offer for sale to the proper authorities for approval), can only be proceeded against by sending in a complaint to the immediately superior police authorities.

II.—Regarding the business of foreign commercial travelers in particular.

(1) The provisions laid down by treaties shall find application in the cases of commercial travelers whose position is legalized by means of a commercial traveler's license (*Gewerbelegitimationskarte*), as prescribed in the State treaties. Whenever commercial travelers offer

* This clause provides that, should the specified reasons against issuing the *Wandergewerbebeschein* be found to have existed unknown to the authorities before its issue, or only present themselves after its issue, they are equally valid as grounds for withdrawing the same.

goods for sale to, or bring goods from, persons other than merchants or producers of such goods, or in places not devoted to public sale, or whensoever they try to obtain orders for goods from persons other than merchants, or such persons as make use of the goods in question in the prosecution of their business, the provisions given above under I shall be applied to them.

(2) Commercial travelers belonging to states with which no special agreement has been concluded respecting the commercial traveler's trade license, but which have the right of the most favored nation in regard to commerce, require a trading license (*Gewerbelegitimationskarte*) of the kind given in the following annex I for the conduct of their business in Germany.

These cards entitle the holder to purchase goods from tradesmen or producers of goods, or in places devoted to public sale, and to try to obtain orders for goods from tradesmen or persons such as make use of the goods in question in the prosecution of their business, throughout the whole of the German Empire, after he has paid the proper taxes, provided no special provision is made in regard to the latter by treaty of commerce (with the State of which he is subject). He may only carry with him patterns of goods, but no actual goods.

The provisions of chapter 3 of the commercial code shall be applied in regard to the issue, refusal, or withdrawal of the cards for the legalization of trade, with the reservation that the fact of having no domicile in the country (section 57 of the commercial code) does not form a reason for refusing to issue such a card, and that measures taken upon the basis of these provisions can only be disputed by means of complaint made to the directly superior authorities of police (*Aufsichtsbehörde*).

(3) As regards the conduct of the business of commercial travelers (Nos. 1 and 2), the provisions of chapter 3 of the commercial code shall receive corresponding application.

III.—*Formulas for traveling traders' licenses.*

Such licenses are to be drawn up as per forms annexed, of which Formula A must be used in cases coming under section 55, No. 4, of the commercial code, Formula B for subjects of the Empire, and Formula C for all other cases of commercial business being conducted while moving from place to place.

IV.—*Final clause.*

The above provisions shall come into force on the 1st of January, 1884.

Annex 1 to the Central Blatt for the German Empire for November 3, 1883, p. 308.

GERMAN EMPIRE.

(*Kingdom of [sea] Prussia.*)

Trade license for foreign commercial travelers for the year 18—.

(Valid for the German Empire after fees of states are paid.)

I ———, resident at ———, is empowered ——— to buy goods on account and to obtain orders for goods.

The ——— of ——— 18—.

On the back of this card the following is printed:

"The holder of this card is empowered to buy goods only while moving from place to place, and exclusively on account of the aforesaid firm of ———, from tradesmen or persons who themselves produce the goods in question, or in places devoted to public sale, and to obtain orders from tradesmen or persons in whose trade the goods in question are used.

"He may only take patterns of goods, and not actual goods, with him.

"He is required to carry this card upon him while engaged in his business, to produce it if desired to do so by competent authorities or officials, and, should he be unable to do so, to give up continuing his business upon their order to that effect until the card be found.

"The card is not transferable."

Extract from the Central Blatt für das Deutsche Reich, of November 16, 1889.

Notice of the 8th of November respecting an alteration made in the provisions for putting into execution the commercial code issued the 31st of October, 1883.

By decision of the federal council, the words "subject of ——" ("staatsangehörig in ——"") are to be added to the established formulas A, B, C, for itinerant trade licenses (*Wandergewerbeschein*) (*vide* notice of the imperial chancellor of the 31st of October, 1883, Central Blatt, p. 305), and placed upon p. 1, after the words "resident at ——" ("wohnhaft zu ——"").

Official memorandum of March 3, 1890.

(1) English commercial travelers, whose business is restricted to purchasing goods from merchants, or from such persons as produce them, or else in public market-places, and to trying to obtain orders for goods from merchants or persons in whose trade or business the goods offered for sale are used, are relieved of the duty of paying dues or fees within the Empire by virtue of the most-favored-nation clause, so long as they carry about with them patterns of goods only and not actual goods. They must, however, pay a trifling fee, which differs in the different states of the German Confederation, in order to obtain the necessary trade license (*Gewerbelegitimationskarte*).

(2) Foreign commercial travelers, whose business is not restricted as described under paragraph 1, or who offer their wares for immediate sale (so-called retail travelers), are required to pay the duty levied in the separate confederated states for the right of trading while moving from place to place, as well as the fee for the requisite "itinerant trade license," the amount of which is also different in the various confederated states.

GREECE.

Commercial travelers are not subject to any license or permit while traveling in Greece, when provided with authentic proof of their occupation as such.

ITALY.

Under the most-favored-nation clause, "beyond a certificate of identity, no fee nor license is required, and every facility appears to be given by the Italian customs authorities for the free entry of all samples which commercial travelers may bring with them."

MONTENEGRO.

No fees or licenses are required.

NETHERLANDS.

Whilst different and, in some cases, less favorable regulations are in force with reference to Netherland commercial travelers and those of some other nationalities, as set forth in article 7 of the law of the 24th of April, 1843 (*Staatsblad* No. 16), British commercial travelers pay a fixed license duty of \$6.21 per annum, and, under the most-favored-nation clause, commercial travelers from the United States pay no more than this sum.

All commercial travelers enjoy the same advantages as regards the patterns which they bring into the Netherlands. Patterns having no commercial value are always admitted free of import duty into this country, whilst goods liable to duty, which are imported by commercial travelers to serve only as patterns, are also admitted provisionally free of duty, on condition of the observance of the necessary customs formalities for securing the re-exportation of such goods.

PORTUGAL.

No regulations exist.

ROUMANIA.

Commission agents, commercial agents, commercial travelers, and, in general, all who serve as intermediaries between manufacturers and commercial houses shall declare in writing to the chamber of commerce, or, failing the chamber of commerce to the local communal authorities (*primaria*) the houses or manufactories for which or in whose name they work, and, at the same time, they shall deposit a copy of the power of attorney, in virtue of which they are authorized to receive orders for their respective houses, whether wholesale or retail.

This power of attorney shall be drawn up in accordance with the laws of the country where it is issued and duly legalized by the Roumanian legation in that country.

The chamber of commerce to whom such a power of attorney is presented shall register and keep in its archives a legalized copy of this document, recording the date, the articles or products concerned, as well as the names of the commission agents and of the house represented, and shall also deliver a certificate that it has deposited and registered the same.

When the power of attorney is presented to the local communal authorities, they shall inscribe the same and send a legalized copy to be kept by the chamber of commerce of the district in which the commune is situated.

Due notice shall also be given by the agent or intermediary to the chamber of commerce of the withdrawal of the authorization to represent this or that house or manufactory.

It is stated in article 9 of the law on licenses (*legea patentelor*) that persons who come provisionally from abroad with different manufactures or other articles, and who sell them in retail to individuals or wholesale to commercial houses, are considered as itinerant (*ambulanti*) and are subjected to a tax of half of that paid by merchants dealing in similar articles—as a rule, $2\frac{1}{2}$ per cent. per annum.

RUSSIA.

Commercial travelers, when visiting all parts of the Empire, with the exception of the grand duchy of Finland, need not provide themselves with licenses for the legal prosecution of their business.

In Finland, however, by a decree issued on the 26th of January, 1889, the provisions of which apply as well to Russian commercial travelers as to those of all other nationalities, all such travelers offering or disposing of wares of foreign origin for their own account or for that of others are liable, after a residence exceeding three days in Finland, to a tax of \$24.33 for the right of trading during one month, reckoning at the rate of a complete month, although only a part of that month may be devoted to trading in the country. At the expiration of a month for which the license was issued the same must be renewed for a further period of one month, and so on, according to the duration of the time of the commercial traveler's transaction of business in the grand duchy.

For the infraction of the foregoing decree a fine is imposed in addition to the exaction of the established tax, and the proceeds of the fine are shared equally between the informer and the poor.

NOTICE.

As uncertainty seems to exist concerning the application of paragraph 1, section 1, of the decree dated the 17th of December, 1888, touching the tax which shall be imposed on foreigners trading in Finland during the years 1889, 1890, and 1891, the finance department, in accordance with the determination of the Senate, gives notice that, when commercial treaties have been concluded between Russia and certain foreign states, the subjects of those states, when trading in Finland, shall be freed from the payment of all taxes other than or higher than those imposed on the inhabitants of the country; hence the trading tax named in paragraph 1, section 1, of the above-mentioned decree shall not be applied to the merchants or travelers of those states nor to Russian subjects of the same category.

SERVIA.

Commercial travelers must be provided with a document in accordance with the form shown below (which, in order to avoid delay at the frontier, should be drawn up or accompanied by a translation in the German language), as, if they arrive in Serbia without such a document properly certified by the authorities in their own country, they would subject themselves to the payment of a trade tax.

An import duty is charged on all samples and patterns, for which a drawback is given if required, the amount being repaid on re-exportation. But if this occurs at some other place than that of entry, then due notice must be given at the latter place, in order that the traveler's desire may be notified to the customs authorities at the intended place of exit.

Besides the above-mentioned import duty, which is levied provisionally, all samples and patterns are subjected to the following charges, the money thus paid not being returned on their re-exportation: For loading, 4 cents per 100 kilograms; for weighing, $1\frac{3}{4}$ cents per 100 kilograms; for paving, 2 cents per 100 kilograms; for warehousing, 1 cent per 100 kilograms, per day.

TRADE CERTIFICATE FOR COMMERCIAL TRAVELERS, GOOD FOR THE YEAR 18—.

It is hereby certified that Mr. ——— is the owner of a ——— warehouse (manufactory) in ———, under the firm ———.

As Mr. ——— intends to solicit orders for the said firm and for the following-mentioned firms, ———, in the Kingdom of Serbia, he is hereby enjoined to conform to the regulations of this country in his commercial operations for the aforesaid firm.

The bearer of this certificate is authorized to travel, to take up orders, and to make purchases exclusively in behalf of the aforesaid firms. He shall take patterns only, but no wares. In soliciting orders and in making purchases he shall observe the regulations of the country.

(Name of place, date, signature, and seal of the certifying authorities.)

(Description, residence, and signature of traveler.)

SPAIN.

BARCELONA DISTRICT (INCLUDING VALENCIA AND ALICANTE).

The answers given by the local officials to the questions put to them on the subject are somewhat ambiguous. A license costing about \$29.42 is taken out by travelers in plate and jewelry, and one, of which the price is about \$24.53, by those dealing in hardware or dry goods, both of which charges are increased by a supplementary rate of about 34 per cent. But a traveler whose nationality brought him under the protection of a commercial treaty with any stipulation in his favor naturally benefits thereby.

It is suggested that British commercial travelers in the province who enjoy exemption under the most-favored-nation treatment clause in the Anglo-Spanish treaty might, nevertheless, do well to apply at the office of the *delegado de hacienda*, at Barcelona, and obtain a *patente* (license), which would be issued to them gratis.

If a commercial traveler go beyond his business of taking orders and imports or exports goods as a merchant, he renders himself liable to any tax imposed on local merchants.

BILBAO DISTRICT.

No fees or licenses are required, but a passport or other document establishing identity should be forthcoming. For any goods subject to provincial or municipal dues, a deposit for the amount is exacted over and above any duties levied by the customs.

CADIZ DISTRICT.

No special regulations are reported as being in existence.

MALAGA DISTRICT.

A similar absence of rules prevails, and no customs duties are charged on samples so long as they are not in salable quantities. If samples that might be sold are introduced, an entry respecting them might be made at the custom-house, and, on its being shown that no actual sales had been effected, duty would not be payable.

PALMA (BALEARIC ISLANDS).

No instructions are enforced beyond the observance of customs regulations, and the only inconvenience which might possibly arise would be from the neglect on the part of a commercial traveler to have his samples or goods of value declared previously to embarkation for the islands.

It may be added, in conclusion, that information given by a traveler for a French firm for haberdashery, etc., is to the effect that no practical difficulties are experienced in this branch of business, and that the best plan, on the whole, is to pay duty on entering the country on any samples or parcels of goods which may be brought with a view to possible immediate sale, and to sacrifice the amount paid on articles remaining unsold and taken away again, the recovery of drawback not being worth the trouble of the formalities to be observed.

ARTICLE IX OF COMMERCIAL TREATY BETWEEN SPAIN AND FRANCE OF FEBRUARY 6, 1882.

Spanish manufacturers and merchants, and also commercial travelers traveling in France on the business of a Spanish house, and, reciprocally, French manufacturers, traders, and commercial travelers traveling in Spain in the interest of a French house, shall be entitled to effect, without thereby being subjected either in France or Spain to any duty, purchases requisite for their trade, and to book orders, with or without samples, but without any hawking of merchandise.

ARTICLE V OF COMMERCIAL TREATY BETWEEN SPAIN AND GERMANY OF JULY 12, 1883.

Merchants and manufacturers who are able to prove in the usual international way that in the country of their domicile they have been duly recognized as such shall in this respect, in the territories of the other party, pay no dues or taxes if they, with or without samples, but without taking about with them any goods, travel themselves through the country or send commercial travelers or agents in the interests of their commercial or industrial business for the purpose of making purchases or of obtaining orders.

It is, however, to be understood that the above arrangement is not to contravene the laws and ordinances on peddlery, which in each of the two countries apply to all foreigners.

Articles liable to customs duty, which are introduced as samples by merchants, manufacturers, and commercial travelers, shall mutually be relieved from duties, on the understanding that these articles be re-exported unsold within a period settled beforehand, with the proviso that the custom-house formalities for the re-exportation or for the rewarehousing of the goods be complied with. These formalities shall be established by common understanding between the two governments.

No impediment shall be placed on the movements of travelers, and the administrative formalities with reference to travelers' papers required on entering the territories of the high contracting parties, as well as on leaving the same, shall be limited to what the public safety absolutely requires.

SWEDEN.

EXTRACT FROM AN ACT RESPECTING TAXES FOR CERTAIN PECULIAR ADVANTAGES AND RIGHTS.

Any foreigner or Swedish subject residing abroad, who has not paid taxes to the Swedish Government at the last collection, traveling about the country either on his own account or on that of another person with the view of effecting sales of foreign commodities to be delivered

in the immediate future, whether traveling with or without samples, on entering this Kingdom must send in a written declaration to the nearest collector of taxes living in the town, stating how long he intends to remain and inclosing \$26.80 as payment in advance for every month or part of a month of his intended stay for the privilege of carrying on his business. This payment, whether for one month or for a longer period, must be made to the tax collector of the principal town of the province in which the traveler is resident at the time. The receipt for the sum paid should be applied for on a printed form, which must be forwarded to the governor of the province. The receipts are supplied by him to the tax collectors in the towns. They shall be for \$26.80 each, and must contain a notice concerning the due observance of the law on such trading.

The foreigner or Swedish subject who wishes to effect sales of foreign commodities before beginning to transact such business must prove to the police that he has paid the proper sum; and, should he demand it, the police must give him a certificate, in order to furnish him with proof of having duly applied to them.

Should any one have neglected to pay the tax or not have given information to the police before entering on business, he will be liable to a fine of from \$26.80 to \$134, and also, in the first instance, must pay for a license for the time during which he was carrying on business illegally.

Offenses against this enactment fall within the competency of the police courts, where such exist, and, in default, of the central courts. The proceeds of the fines shall be equally divided between the informer and the municipality in which the offense was committed.

The sums thus collected must be placed with other moneys belonging to the Crown in the provincial treasury. At the end of each year an account must be made out of the receipt forms paid in, which must be forwarded to the governor of the province, who, after having certified it to be correct, must forward it to the Swedish treasury before the end of the following January to be compared with the account from the provincial treasury.

A proper account of the receipt forms furnished by the central authorities to the governors of the provinces (which, until delivered to the tax collectors, should be kept in the provincial treasury) should be sent in before the end of January.

The above law does not apply to Norwegians dealing in Norwegian products.

NORWAY.

LAW OF AUGUST 8, 1842, AMPLIFIED BY THE LAW OF JUNE 4, 1866.

SECTION 24. Traveling merchants or merchants' clerks (commercial travelers), whether native or alien, shall not take orders for goods except in the market towns of the Kingdom, nor for smaller quantities than those specified in section 21 of the law of the 8th of August, 1842,* and in the law of the 4th of June, 1866, unless the order shall be given by a local licensed trader. If they bring their goods with them, the lawfulness of the sale thereof shall in every respect be determined by the provisions of section 21 of the law of the 8th of August, 1842, as amplified by the law of the 4th of June, 1866.

SWITZERLAND.

Commercial travelers are subjected in Switzerland to license fees in accordance with the varying regulations of the twenty-five cantons and half-cantons forming the Swiss Confederation.

* This paragraph, as amended in 1866, permits aliens, as well as natives of every description (not being licensed traders), to import foreign goods and to sell them in the market towns of the Kingdom on the following conditions: (1) That the sales shall be effected from the vessel in which they shall have been brought, or by giving them to a local licensed trader for sale on commission or by public auction; (2) that, in the case of sales effected from on board ship or by public auction, the quantities thus sold shall not be smaller than those specified in the list attached to the law. As commercial travelers must necessarily deal with "local licensed traders," whether they desire to take orders for goods or to sell such samples or goods as they may have brought with them, it is unnecessary to reproduce the long list of imitations in quantity attached to the laws of 1842 and 1866.

Commercial travelers, however, who are citizens of the United States, under the most-favored-nation treatment clauses are exempted from these fees and licenses, if they are bona fide travelers for orders and do not carry about goods for sale.

This exemption is secured to them by article 22 of the Franco-Swiss commercial treaty of 1882, which, in translation, runs as follows:

"French commercial travelers traveling in Switzerland on account of a French house, and, reciprocally, Swiss commercial travelers traveling in France on account of a Swiss house, may, on the production of a card of legitimation in conformity with the pattern annexed to the present treaty, or on mere justification of their identity, make, without being subjected to any license fee, purchases for the needs of their industry or collect orders, with or without patterns, if they do not carry about goods for sale."

In the official list of the different license fees collected in the twenty-five cantons and half-cantons it is expressly stated that commercial travelers for orders who belong to states enjoying by treaty most-favored-nation treatment in Switzerland are exempted from these fees.

It will be seen that, with very few exceptions, Swiss commercial travelers do not enjoy similar exemption, even in their own cantons.

In order to secure this exemption, a document clearly showing that the traveler in question is employed for a house of business having an American nationality and domicile is required.

TURKEY.

No fees or licenses are required.

ARGENTINE REPUBLIC.

Commercial travelers doing business in Buenos Ayres must take out a broker's license, which is valid only in that capital. In the provinces they are subject to local regulations in force in each province, the details of which are not at hand.

BRAZIL.

Traveling dealers, or peddlers, as they are denominated in the regulation annexed to the decree No. 9870 of the 22d of February, 1888, are subject to the following taxes:

(1) As regards the general revenue, to the taxes mentioned in Schedule A of the said regulation, which, at page 53, specifies, under the word "peddler," the different descriptions of this class and the schedules in which they are included, the taxes also varying according to locality.

(2) To the tax due for the license, to be obtained from the municipal chambers, to enable them to follow their trade in the places which they desire to traverse.

(3) To the duties denominated hereto "provincial," but actually belonging to the revenue of the state of this Republic wherein their trade is followed.

In these two last cases the taxes vary according to the municipality of the state traversed by the dealer.

* * * * *

The cost of annual licenses granted to peddlers who trade within the municipal district, according to the value of the goods they deal in, which shall be regulated by a table, subject to the approval of the Government, runs from \$10.92 to \$54.60. The license for hawking cotton goods, jewelry, gold, and silver is \$54.60; for hawking hardware, glassware, trays, and plated articles, \$27.30; for hawking haberdashery and small ware manufactured of tin, iron, or other metals, \$10.92.

As regards other municipalities forming the limits of the actual states of Brazil, municipal legislation is generally uniform; bearing in mind, however, that, in virtue of article 2, paragraph 4, of the decree of the 20th of November last, the powers conferred by the additional act on the extinct provincial assemblies regarding the settling of municipal expenditure and dues necessary for same have ceased to exist.

No. 124—8.

Commercial travelers (*caixeiros ambulantes*), who offer goods for sale in the interior of Brazil by means of samples, being, as they are, in fact, the agents of the commercial firms to which they belong, which firms pay taxes in the localities in which they are established, are not subject to any imposition on behalf of the general revenue; they may, however, be subjected to some municipal contribution by the states in which they travel.

Those, however, who may establish themselves in any place and sell their goods on commission are considered as commission-merchants (*commissarios*), and, as such, are liable to the charges mentioned in tables A and D of the regulations established by decree No. 9870 of the 22d of February, 1888.

CHILI, COLOMBIA, ECUADOR, AND PERU.

No fees or licenses are required.

MEXICO.

No fees are levied or licenses required by the Federal Government, but in certain states the local authorities require commercial travelers to notify their arrival and take out monthly licenses for the time they may be carrying on business in the state.

In the states of Jalisco and Nuevo Leon, for instance, commercial travelers, before being permitted to open their samples, have to pay \$77.86 as a state, and \$19.46 as a municipal, tax. It is a little lower in some states, as Coahuila, where the state charges \$58.30 and the municipality the same as in Jalisco.

It is very probable that such taxes are levied wherever the lines of communication bring these agents in considerable numbers.

URUGUAY.

SUMMARY OF THE REGULATIONS IN FORCE AS TO COMMERCIAL TRAVELERS IN MONTEVIDEO.

Trade license law for 1889.

ARTICLE 1. During the financial year 1888-'89 the license tax, classed as specific and ad valorem, will be levied only on the handicrafts, professions, and branches of commerce and industry specified in the following articles.

ART. 2. Specific licenses will be issued according to the following categories and rates:

* * * * * *

Seventh category.—Paying \$100.

Decree for the purpose of carrying out the law of February 8, 1889.

ARTICLE 1. The license tax must be paid by the 15th of March next.

ART. 2. Handicrafts or branches of commerce and profession which begin to be exercised after the expiration of six or nine months of the present year will pay only one-half or one-quarter of the tax respectively.

* * * * * *

ART. 12. Persons who neglect to take out a license at the due date, or who take out a license of less than the proper amount, or who make any alterations to the prejudice of the exchequer and contrary to the law, shall pay a fine equivalent to the amount of which the exchequer has been defrauded, besides the costs of proceedings.

* * * * * *

ART. 14. Any person desiring to exercise any branch of industry or commerce or any handicraft or profession liable to the license tax must first obtain the permission of the chief of police and apply to the bureau of indirect taxes in Montevideo (in the other departments, to the provincial treasury) for the issue of the corresponding license.

* * * * * *

ART. 16, paragraph 2. All applicants for licenses are obliged to state their names, nationality, and place of residence.

ART. 17. False declarations will render the applicant liable to a fine of from \$20 to \$200, according to the importance of the fact of concealment, when this does not affect the amount of the tax payable, in which case article 12 will be applied.

JAPAN.

There do not exist in Japan at present any special regulations with regard to commercial travelers. Under the existing treaties no foreigners are allowed to travel in the interior of the country for purposes of trade, and at the open ports—Tokio, Yokohama, Hiogo, Nagasaki, Hakodate, and Niigata—commercial travelers are allowed, in common with all other foreign traders, to pursue their calling within the limits of the settlements existing at these places, and are not obliged to pay fees or take out licenses.

MOROCCO.

No fees or licenses are required.

EGYPT AND PERSIA.

There are no regulations, and, presumably, no fees are levied.

SLATE QUARRIES OF ANGERS.

REPORT BY VICE-CONSUL BENNETT, OF NANTES.

Situated about 3 or 4 miles from the city of Angers and extending over an area of 10 or 12 miles square are the *ardoisières*, or slate quarries, of Angers. They are found in the communes, or townships, of St. Leonard, St. Barthélemy, Trelage La Poueze, Renage, and Noyant-la-Gravière. The larger number of these quarries (La Fresnaies et Trelage, La Paperie, Grands Carreaux, Petits Carreaux, l'Hermitage, La Poueze, and Renage) are worked by a syndicate or commission; the others (Grande Maison, Pont Malembert, Misengrain, and Noyant-la-Gravière) are worked separately and independent of each other.

There are six or seven large open-air quarries; the others are under-ground galleries. Pont Malembert, an open-air quarry, employs 180 workmen and produces about 2,000,000 slates per month. La Paperie, a gallery at the depth of 170 meters from the surface, produces about 2,000,000 pieces per month. Les Petits Carreaux has a gallery at the depth of 145 meters from the surface; employs 330 workmen and seven machines. L'Hermitage, with 400 workmen, produces 3,100,000 slates per month. Les Grands Carreaux has a gallery 45 meters long, 50 meters wide at a depth of more than 100 meters from the surface, employs 400 workmen, 30 horses, and 6 machines, and produces per month 2,500,000 slates. La Poueze employs 80 workmen and produces 500,000 slates per month. La Grande Maison has a monthly production of about 1,500,000 slates. Taken altogether, these quarries employ about 3,000 workmen and 200 children, and they have an annual production of 160,000,000 pieces. The value of the total annual production is \$700,000.

The slate extracted from these different quarries is of two distinct kinds—the ordinary, of which the price varies, according to the size, from 60 cents to \$7 per 1,040, and the English slate, the price of which also varies, according to size, from \$8 to \$40 per 1,040.

The average wages of workmen is 60 cents per day; that of children, 20 cents.

H. D. BENNETT,
Vice-Consul.

UNITED STATES CONSULATE,
Nantes, December 4, 1890.

THE LINEN INTERESTS OF BELFAST.

REPORT BY CONSUL RUBY.

Believing that any information as to the linen industry will be of interest at this time, I have the honor to submit herewith statistical tables showing the extent of the manufacture of linens in Belfast and vicinity, together with wages paid, etc. In addition to what appears in tabulated form, I will add that authentic statistics for the year 1889 show that the average number of pounds of flax produced per acre is 475; average value of flax per ton, \$225; tons of flax grown in Ireland in the year 1889, 18,812; imported for same period from Belgium, Holland, Germany, and Russia, 28,063 tons; exported for same period, 4,053 tons; leaving 42,822 tons as the amount used in manufacturing here for the year. The value of exports of flax products for the year was \$25,000,000, of which more than 40 per cent. was shipped to the United States.

Table showing the number of linen factories and employes therein in Belfast and vicinity in November, 1890.

Employment.	Number of factories.	Spinning spindles.	Doubling spindles.	Power-looms.	Children working half-time.	
					Male.	Female.
Spinning.....	52	705,430	26,190	.....	2,069	2,812
Weaving.....	78	.....	.....	20,696	47	124
Spinning and weaving.....	15	135,018	2,834	4,859	334	462
Not included in above.....	17	.....	.....	.....	.....	8
Total.....	162	840,448	29,024	25,555	2,450	3,406

Employment.	Males under 18, full time.	Females above 13, full time.	Males above 18.	Total number employed.		
				Males.	Females.	Total.
Spinning.....	3,073	18,253	7,135	12,277	21,065	33,342
Weaving.....	889	14,417	3,794	4,730	14,541	19,271
Spinning and weaving.....	764	7,123	2,037	3,135	7,585	10,720
Not included in above.....	65	854	215	280	862	1,142
Total.....	4,791	40,647	13,181	20,422	44,053	64,475

Average weekly wages of operatives employed in linen manufactures per week of fifty-six and a half hours.

Occupation.	Wages.	Occupation.	Wages.
<i>Men.</i>		<i>Women—Continued.</i>	
Preparing and spinning:		Preparing and spinning—Continued.	
Overlookers.....	\$3.08	Drawers and backminders.....	\$1.66
Roughers and hacklers.....	4.50	Rovers.....	1.70
Hackel setters.....	6.23	Layers.....	1.84
Sorters.....	5.61	Spinners.....	2.04
Bobbin carriers.....	3.36	Piecers.....	2.02
Bundlers and driers.....	4.13	Doffing mistresses.....	2.43
Yarn storemen.....	4.13	Yarn counters.....	1.94
Weaving:		Reelers.....	2.16
Teutens or tuners.....	9.11	Weaving:	
Beamers.....	4.62	Warpers.....	2.73
Dressers.....	7.21	Drawers-in.....	2.57
		Weavers.....	2.29
<i>Lads and boys.</i>		<i>Girls.</i>	
Preparing and spinning:		Preparing and spinning:	
Roughers.....	2.73	Line spreaders.....	1.39
Sorters.....	1.58	Drawers and backminders.....	1.29
Bobbin carriers.....	1.50	Rovers.....	1.50
Yarn counters.....	1.86	Layers.....	1.62
Weaving:		Piecers.....	1.60
Teutens' apprentices.....	2.51	Doffers.....	1.43
<i>Women.</i>		Weaving:	
Preparing and spinning:		Givers-in.....	1.17
Line spreaders.....	1.78		
Tow carders.....	1.80		

SAMUEL G. RUBY,
Consul.

UNITED STATES CONSULATE,
Belfast, November 14, 1890.

DUTY CHANGES IN COLOMBIA.

REPORT BY MINISTER ABBOTT, OF BOGOTA.

The Colombian Congress has made certain changes in respect of the duties upon the products of Ecuador imported through the custom-house of Ipiales. By article 5 of the same law the duties upon all importations through the custom-house of Tumaco are reduced 25 per cent. from existing rates. The latter provision only is of interest to our merchants.

The law takes effect in ninety days from October 21 last, and the diminution is gradual, extending over a period of ten months in decimal proportion, according to article 205 of the constitution.

JOHN T. ABBOTT,
Minister.

UNITED STATES LEGATION,
Bogota, December 2, 1890.

THE FREE PORT OF BOCAS DEL TORO.

REPORT BY MINISTER ABBOTT, OF BOGOTA.

The Colombian Congress has placed the free port of Bocas del Toro upon the same footing as Panama and Colon in respect to commerce.

I inclose a copy and translation of the law. Reference may be had to inclosure 2 for a proper understanding of section 2, article 32, of the fiscal code referred to in the law herewith transmitted.

JOHN T. ABBOTT,
Minister.

UNITED STATES LEGATION,
Bogota, November 23, 1890.

LAW 33 OF 1890.

[Inclosure 1 in Minister Abbott's report.—Translation.]

The Congress of Colombia decrees:

ARTICLE 1. The free port of Bocas del Toro, in the district of the same name, is opened (*habilitado*) to the commerce of importation and exportation, and shall enjoy the exception which section 32 of the fiscal code has made as to the ports of Panama and Colon.

* * * * *

Approved November 7, 1890.

PORT REGULATIONS OF COLOMBIA.

[Inclosure 2 in Minister Abbott's report.—Translation.]

TITLE 3, CHAPTER I, OF THE CODIGO FISCAL OF COLOMBIA, WHICH WENT INTO EFFECT
JANUARY 1, 1874.

* * * * *

ARTICLE 8. The custom-houses of the Republic have for their object the administration of the imposts which the law establishes upon foreign merchandise at its importation and upon the vessels which may enter the ports.

ART. 9. The commercial operations, subject to the administration of the custom-houses, are classified as follows:

(1) Importation, which consists in the introduction of foreign merchandise for the consumption of the Republic.

(2) Exportation, which consists in sending its products from the Republic to foreign countries.

(3) Transit, which consists in the passage of foreign merchandise through the territory of the Republic to another country.

(4) Coasting trade (*cabotage**), which consists in the traffic which is carried on by sea, in foreign merchandise lawfully imported which has paid the legal duties, between the ports of entry of the Republic.

* Colombian laws divide what is known to our system under the general term "coasting trade" into *cabotage* and *el comercio costanero*, as defined in clauses 4 and 6.

(5) Deposit, which consists in storing foreign merchandise introduced for transit or re-exportation in the warehouses of a custom-house while these operations are being carried into effect.

(6) The coasting commerce (*el comercio costanero*) is that carried on by every kind of vessel between the ports of entry of the Republic and places not ports of entry (*no habilitadas*) in the transportation of the products of the country or foreign merchandise which has paid the legal import duties.

ART. 10. Importation is permitted only into free ports and ports of entry (*habilitados*).

Transit is only permitted through free ports and the port of entry of Cucuta, with destination to Venezuela.

Deposit is only permitted, ordinarily, in the custom-house of Cucuta. In the other custom-houses it may be allowed by exception in the cases mentioned in article 81 of this code.

Exportation will follow the rules laid down in articles 195 to 205, 268 to 272 of this code.

The operation defined by article 9 shall be executed through legally constituted ports of entry, their execution being expressly prohibited through places not ports of entry (*no habilitadas*), except as provided in the preceding article, and except, also, as provided by article 209, in respect to exportation.

* * * * *

ART. 12. Commerce between free ports and places not ports of entry is absolutely prohibited. Consequently, both the ship or smaller boat which may carry merchandise from a free port to a place not a port of entry, as well as the merchandise carried, shall be subject to the penalties established by clauses 2 and 3 of article 326 of this code.

The captain of the ship or person (*patron*) in charge of the smaller boat, his accomplices, aiders, and abettors (*encumbredores*), shall each be fined, by competent authority, \$200 and imprisoned from two to four months.

This penalty shall be inflicted, not only when the boat may be surprised loading, unloading, or carrying merchandise, but also when, after such proceedings have taken place, the act has been denounced before some national employé and fully proved in a judicial trial.

ART. 13. Merchandise is also declared to be contraband when found in a vessel surprised on the high seas, in a roadstead or inlet, or in a port where there is no custom-house, having one or more vessels about the same (of any size or description), or tied to its side which may not belong to the same, unless sent by permission of the chief officer of the custom-house.

The ship itself, the small boats around it (*embarcaciones*), the captain, master, and his accomplices and aiders shall be subject to the penalties established by article 12 of this code.

ART. 14. Commerce of the coasting trade (cabotage) and coasting commerce (*costanero*) with foreign merchandise from places not ports of entry to ports of entry is also prohibited.

* * * * *

ART. 15. Coasting trade (cabotage) is also prohibited in vessels which carry merchandise for importation or exportation.

ART. 16. [Contains a list of the ports of entry, which includes no place on the San Blas coast.]

ART. 17. [Contains a list of free ports, in which no place on the San Blas coast is included.]

* * * * *

ART. 22. Commerce from free ports to ports of entry shall be treated as foreign commerce.

ART. 23. There shall be a custom-house in every port of entry.

* * * * *

ART. 32. The executive power is permanently authorized to establish the following regulations:

* * * * *

(2) To permit or prohibit importation of foreign merchandise into the ports or territories which existing laws may have declared free, except the ports of Panama and Colon.

* * * * *

(5) To establish the formalities to be observed in free ports and in ports and territories which are not free, in order to prevent smuggling.

(10) To prohibit re-exportation or coasting trade (cabotage) by the same vessel which brings the merchandise, unless said acts may be done in a different voyage from that in which the importation was made.

ART. 51. When it happens that any document certified to by a consul is not in the prescribed form, said functionary is liable to a fine equal to double the fee for said document.

ART. 302. All foreign merchandise may be carried from one port of entry to another, or from a port of entry to a place not a port of entry on the sea-coast, after the import duties have been paid or secured on said merchandise.

ART. 304. Permission to load and proceed from one port to another must be in writing from the chief customs officer, who shall take into account the prohibition of article 202, and after a visit and thorough inspection of the vessel's hold.

ART. 316. The provisions of articles 303 to 307 and of 310 are extended to vessels carrying foreign merchandise imported into ports of entry (*habilitados*) destined for ports on the coast not ports of entry (*no habilitados*) for foreign merchandise.

ART. 325. The offenses connected with the commercial operations of custom-houses are enumerated in the various preceding articles, and also in the following:

(3) The discharge, loading, or transportation of foreign merchandise for coast trade, either for cabotage or for re-exportation, made at places not ports of entry, or at hours not authorized, or without the proper documents.

ART. 331. When deposits of foreign merchandise are discovered in houses, huts, ranches, or other places on the coast which may be suspected on account of their proximity to a port, such merchandise shall be dealt with as provided for in section 2, article 325, unless its legal introduction can be established.

AMERICAN TRADE IN NICARAGUA.

REPORT BY CONSUL NEWELL, OF MANAGUA.

From time to time this consulate is in receipt of letters asking, "How can the business firms in the United States increase their trade?" This is a broad question and one not easily answered.

Much could be done by the firms in the United States toward increasing their business with Nicaragua, if they would study its wants and requirements. Articles suitable for Europe and the United States are not such as meet the demands of the trade here. The people of this country do not care so much for an elaborately finished implement of husbandry as they do care for a serviceable and durable article. The nature of the country, with its long seasons of rains and dry weather, makes it absolutely necessary that the tools in use should be such as can stand much moisture and dryness. This condition of weather demands that all tools composed largely of wood

should be of thoroughly seasoned and hard woods. This matter, either through carelessness or indifference, has been entirely ignored by the leading firms of the United States.

In the matter of cloths and calicoes, the merchants of the United States have been very remiss. They make an article of this class that is too fine. When I say "too fine," I do not wish to be understood as meaning too good; such is far from my intention. The laboring class in this country do much of their work in the forests and in the field; consequently, they require clothing strong and substantial rather than fine. Again, the merchants have not considered the weight of the cloth that is proper to be worn in a climate of a tropical character.

Much of the trade of Nicaragua now goes to England and Germany. This is because the merchants of Nicaragua can get longer credits. A credit in England and Germany can run from eight to nine months, while in the United States a credit of only six months is given, and upon small amounts no credit at all. The business firms of the United States will have to modify their system in this particular, if they desire to extend their trade with Nicaragua. The merchants of Nicaragua are as reliable and upright a set of men as can be found in any country. The business failures in Central America are exceedingly small in number, which should alone be an inducement for United States firms to extend the length of time of credits. Nicaraguan merchants give as another reason, also, for trading with England and Germany that they can buy cheaper in those countries.

The goods that are sent from the United States to Nicaragua are not packed in a convenient size. In a country like this, where railroad facilities are yet in their infancy, much of the transporting is done with mules, so that packages of large bulk can not be carried. When the goods reach the large cities, they have all to be unpacked and repacked in small parcels.

For shipment to this country goods should be packed so that no one package would be over 100 pounds in weight. This weight enables the mules to be packed without trouble or difficulty. I am aware that this question has been written upon frequently, but I feel that it is one on which too much can not be said.

The business men of the United States could in no wise better advance their trade than by visiting Central America and coming in contact with her merchants. We can not accomplish much by the mere sending of circulars and catalogues. The system of drummers, which has met with such marked success in the United States, could well be adopted in Central America. It is not, however, advisable at the first to send promiscuous drummers into Nicaragua. A representative business man should visit the country—a man who is capable of studying and comprehending the condition of the people and the climate, and also the actual status of the trade of the country. It would be worse than useless to send a man here who has no knowledge outside of the mere question of buying and selling. After the requirements of the trade have been carefully studied, then let the

drummer continue the work thus begun. A number of firms, who trade in different articles, might have one man represent them all.

The establishment of trade depots or sample houses would be a long stride in the direction of the extension of United States trade in this Republic and the others in Central America. These houses should not be in charge of a mere clerk, but a man capable of appreciating the question of trade as between countries.

American merchants must let Central America know that they desire its trade by coming here and seeking it; not only this, but must show that they are willing to give the same terms as can be secured in other countries. Nicaraguan merchants are anxious to trade with the United States, but say they can not do so until American houses meet them with the terms that they can obtain in England and Germany.

Another serious drawback to the extension of trade between Nicaragua and the United States is the want of sufficient steam-ship facilities. This is a matter that merits the careful and earnest study of the public men of the United States. Steps should be taken to place America's commerce on the same footing as is enjoyed by England and Germany.

These are some of the ideas that have come to mind in considering the question of the extension of United States trade in Nicaragua.

WILLIAM NEWELL,
Consul.

UNITED STATES CONSULATE,
Managua, November 14, 1890.

THE CARPET INDUSTRY OF GLASGOW.

REPORT BY CONSUL BROWN.

Upon receipt of your dispatch, I at once sent inquiries to all of the carpet-manufacturing firms in the district. To these inquiries I have received six replies, one of them from J. S. & S. Smith, manufacturers of patent ingrain art squares and yard wifes, bed covers, rugs, and mats, giving, in part, information asked for. Each of the other five firms which sent replies declined to answer any of the inquiries.

The above-named firm of J. S. & S. Smith, which, by the way, is a most reputable one, being extensive manufacturers of the line of goods mentioned and carrying an immense stock of house furnishings in their warehouse in this city, answered the several questions as follows:

Number of looms, 82, of which 15 are power and 67 hand looms; of this number, 28 are used in the manufacture of rugs and 54 in manufacturing ingrain carpets, bed covers, etc.

All hands employed are at the works, and work fifty-six hours per week; and I may add that these are the usual hours of employment per week at all the establishments.

Manufactured goods are sent direct from the works to the warehouse, from whence they are sold, the product finding consumption both at home and abroad.

Monthly accounts are rendered.

It will be noted that the information is somewhat meager, and that the firm furnishing information is engaged in a very limited line of work upon which information is wanted. The information which I am able to give from personal observation is, of course, of a general character. I am utterly unable to give details. I send herewith the addresses of ten manufacturing firms; and I understand that there are one or two other firms which manufacture in a small way, but have been unable to learn any thing definite of them or their work.

The first six or seven firms are large manufacturers in their respective lines, and these firms, in the aggregate, manufacture nearly all lines of carpet known to the trade, from the lowest priced to the most expensive whole carpets. One of the largest manufactories is that of J. & J. S. Templeton, Glasgow, which for many years supplied carpets for the White House, and acknowledge no superiors. This firm alone employs many hundred hands, and manufactures nearly every style of carpet, ranging in price from 20 cents to \$15 or more per square yard, and send their products to all parts of the world.

The industry—dyeing, spinning, weaving, etc.—is carried on unitedly in nearly all the works, and, as far as I can learn, in every case the dyeing and weaving is carried on by the same firm. The product is placed upon the market through agencies at home and abroad, and some of the leading firms receive orders direct from all parts of the world. I have been unable to learn on what terms sales are made, except that the terms are variable. I regret to say that I am unable to even approximate the number of looms in each establishment or in the aggregate, though in the aggregate, I may safely say, it will run up into thousands; and in all the establishments which I have visited a very large percentage of the looms in use are power-looms.

As to the number of persons who find wage employment in the manufacture of carpets, I am unable to give any definite answer, but several thousands in the aggregate, without doubt. As far as I have been able to learn, all are employed at the factories, none at their houses. While unable to give rate of wages paid at the factories in this district specifically, fortunately, by reference to my dispatch dated September 30, 1890, I am able to give the average of wages paid by the carpet manufacturers of the United Kingdom, which, it is fair to presume, does not materially vary from the wages paid in this district. From the report referred to, I find that the average yearly wages paid men, reduced to United States currency, is \$336.75; boys, \$105; women, \$115.25; and girls, \$87.50. This includes the full year of three hundred and eleven working days, making no allowance for holidays, sickness, or other causes preventing constant employment. From personal observation, I am satisfied that, of the above four classes, girls are

employed in much the largest proportion. Comparatively few men are employed, the leading designers—those operating heavy machinery and engaged at the largest looms and heaviest work only—being men. Having asked one of the factory owners “why so many girls were employed and so few women and men,” the answer was:

First, the wages are less, and, with our machinery, power-looms, and improved methods, we find that girls learn much more quickly and adapt themselves to new methods more readily; the older women and men, too, do not like to give up the old ways, and their work, as a consequence, is less satisfactory.

As I understand it, these weavers and mill people generally are those whose “manner of living” is of the most economical kind. Dr. Russell, the distinguished medical officer of the city, claims that “25 [24.7] per cent. of the populaton of Glasgow live in houses of a single apartment, and 45 [44.7] per cent. in houses of two apartments.” It is fair to presume that very many of the wage workers above referred to live in such homes.

The following comprises the list of manufacturers, as per requirement of the circular: J. S. & S. Smith, 9 South York street, Glasgow; A. F. Stoddard & Co., Elderslie, Scotland; James Templeton & Co., William street, Greenhead, Glasgow; J. & J. S. Templeton, 128 Crown Point Road, Glasgow; James Sinclair & Co., Stirling, Scotland; Cuthbertson & Taylor, Kilmarnock, Scotland; Blackwood Bros. & Co., Kilmarnock, Scotland; Gregory, Thomsons & Co., Kilmarnock, Scotland; William C. Gray, Ayr, Scotland; Barbour, Anderson & Lawson, Brook street, Mile-end, Glasgow.

L. W. BROWN,

Consul.

UNITED STATES CONSULATE,

Glasgow, December, 1890.

DUTIES ON BUTTER IN THE FRENCH WEST INDIES.

REPORT BY CONSUL KEEVIL, OF MARTINIQUE.

For the information of exporters of butter and its imitations to the French West Indies, I have to report that the following schedule of duties on butter imported from other countries than France has gone into effect:

Butter, 15 francs per 100 kilograms; all imitations, 40 francs per 100 kilograms. In addition, there is a local, or “octroi,” duty on butter and all imitations of 3 francs per 100 kilograms.

As will be perceived by papers sent by this mail, Canadian officials are on the ground making strenuous efforts to obtain the trade now enjoyed by merchants of the United States.

ALFRED B. KEEVIL,

Consul.

UNITED STATES CONSULATE,

Martinique, December 15, 1890.

AMERICAN TRADE IN JAMAICA.

REPORT BY CONSUL ESTES, OF KINGSTON.

As regards Jamaica's trade with the United States, there is an evident tendency to increase exports to the United States and reduce the amount of imports.

One short consular report can not give all the reasons for this. Exporters in the United States, I fear, are largely to blame, not being wide enough awake to the importance of this trade.

A country importing annually \$8,000,000 worth of goods, with 800,000 people, situated at the very door of the United States and without manufacturing industries, is too rich a field for trade to be carelessly treated. The larger part of this trade now goes to Canada and to the United Kingdom and other European countries. If our exporters want this trade, they must come after it as they go after the trade of the great Northwest, *i. e.*, send good salesmen and make goods adapted to trade requirements as they find them after careful observations.

It is much easier to sell the goods that people want than to educate them to take what the importer may have on hand, and it is easier for him to change patterns than to alter a people's ideas of what they want. People here call for a high grade of goods, as a general thing, and are willing to pay for them, if they are made in the styles they like.

Boots and shoes manufactured for the Eastern, Middle, or Western States are not suitable for Jamaica; they have a style peculiar to themselves. Buggies and carriages manufactured for the Western trade can not be sent to Jamaica. If carriage manufacturers of the United States want Jamaican trade, they must first find out what styles are wanted here and what goods will sell best.

Manufacturers should also handle the trade direct or employ commission men who, they feel assured, are not inimical to American goods. Much trouble and dissatisfaction has been caused by the failure to select agents with caution.

The unequal tariff is, undoubtedly, another reason for this tendency. Practically every thing going from Jamaica to the United States is free of duty, and, on the other hand, nearly every thing the United States sends to Jamaica is subject to heavy duty.

The only articles of export from Jamaica that are subject to duty on entering the United States are rum and oranges. Of imports from the United States, meats of all kinds, wheat, corn, oats, and flour seem to fare the worst. The leading items in this heavy tax are \$2 a barrel on flour, \$3.75 on all salt meats, 18 cents per gallon on kerosene.

For a clearer understanding of the amount of exports and imports of any one article and the tariff charges, I will refer to my report of July 30, 1890, published in the August number (119) of the CONSULAR REPORTS.

While it is now too late to enter any goods for exhibit in the exhibition to open here January 27, 1891, I would urge upon manufacturers and exporters the advisability of sending good men to represent them, prepared, where practicable, to show samples. Trade can and should be greatly increased between these two countries.

I am credibly informed that some articles manufactured in the United States are sold by manufacturers and exported to England, and by jobbers there sold to merchants in Jamaica; thus an intermediate profit, which should accrue to the dealers of the United States, is lost to them.

I desire to call attention to only a few articles in which we should greatly increase our trade: Aerated waters, ale and beer, arms, bacon (largely brought from the United Kingdom). In carriages, I am sorry to note the fact that, while the United States has had almost all of this trade and might have it all, the United Kingdom and Canada show an increase and the United States a decrease. This is largely due to two causes: (1) Manufacturers in the United States, and especially those making the better classes of articles, do not make the styles mostly used and best adapted to tropical countries; (2) most of the carriages sent here have come through commission men and are a grade that manufacturers do not care to put their names on. Any manufacturer who will make a good line of buggies and carriages adapted to this trade of not lower than standard, or B, grade, with some fine, or A, grade work, and put them in the hands of reliable agents who will sell them on their merits, will build up a large and profitable trade.

Clocks, watches, and jewelry can all be sold here at good prices; also, drugs and medicines.

The cotton manufacturers of the United States get almost nothing from the Jamaica trade. There is no one article that is more expensive and harder to obtain in Jamaica than ordinary house furniture, and a little attention to this trade will secure it nearly all for furniture men of the United States.

Among other American goods which can be introduced here are fish and fish products, glassware, groceries and confectionery, haberdashery and millinery, musical instruments, condensed milk.

The trade in hardware and cutlery with the United States is very small, yet there are many hardware and cutlery specialties that are produced cheaper and better in the United States than elsewhere.

The trade in boots and shoes and leather goods generally is greatly increasing on the island, and is bound to increase more rapidly in the near future; and, while the United States has been gaining, it has not yet secured more than about 20 per cent. of the trade.

Machinery of all kinds, and especially sewing-machines, should be shown during the exhibition.

Shingles and the cheaper grades of siding, flooring, and wainscoting could be sent here with good effect. Sash, doors, panelings, moldings, etc., of standard sizes and patterns, and especially mill-made houses ready to fit together, could be introduced here to a profitable trade.

There are abundant transportation facilities between the two countries, and freights to Jamaica from the United States should be contracted at very low rates, as there is a great deal of competition, and steamers are much lighter loaded to than from Jamaica.

The regular lines of steamers now running from New York here are the Atlas Steam-ship Company, Anchor line, Honduras and Central American Steam-ship Company, J. W. Kerr & Co., E. J. Wessels & Co.; from Boston, the steamers of the Boston Fruit Company; and from Philadelphia, the Philadelphia Fruit Company, besides the Plant line just established from Tampa.

W. R. ESTES,
Consul.

UNITED STATES CONSULATE,
Kingston, November 26, 1890.

COMMERCE OF LIVERPOOL.

REPORT BY CONSUL SHERMAN.

IMPORTS.

Statement showing the imports at the port of Liverpool during the year ended December 31, 1889.

Articles.	Quantity.	Value.
Animals, living :		
Oxen, bulls, cows, and calves.....number.....	169,450	
Sheep and lambs.....do.....	52,659	
Horses.....do.....	236	
Bones, except whale-fins.....tons.....	25,440	
Casutchouc.....cwts.....	188,806	
Chemical manufactures.....		\$1,978,415
Cocoa.....pounds.....	2,420,546	
Coffee.....cwts.....	48,474	
Corn :		
Wheat.....do.....	15,295,191	
Barley.....do.....	630,860	
Oats.....do.....	81,206	
Peas.....do.....	445,220	
Beans.....do.....	809,837	
Indian corn.....do.....	11,121,108	
Wheat meal and flour.....do.....	2,830,079	
Cotton :		
Raw.....do.....	15,646,007	
Manufactured.....		1,150,775
Drugs—Peruvian bark.....cwts.....	1,539	
Dyes and dyeing stuff—indigo.....do.....	7,548	
Dyes obtained from coal-tar.....		26,820
Pharmaceous substances.....		775,770
Flax.....cwts.....	114,713	
Fruit :		
Currents.....do.....	394,069	
Oranges and lemons.....bushels.....	2,734,091	
Raisins.....cwts.....	170,438	
Apples, raw.....bushels.....	1,297,049	
Unenumerated.....do.....	437,740	

Statement showing the imports at the port of Liverpool, etc.—Continued.

Articles.	Quantity.	Value.
Glass of all kinds.....cwt...	100,263	
Hemp.....do.....	475,191	
Hides, raw.....do.....	249,911	
Hops.....do.....	54,206	
Jute.....tons.....	17,450	
Leather.....pounds...	33,007,733	
Leather gloves.....dozen pairs...	159	
Linen yarn.....pounds...	2,067,459	
Manures :		
Guano.....tons...	777	
Phosphate of lime and rock.....do.....	51,273	
Unrated.....do.....	8,421	
Metals :		
Copper—		
Ore.....do.....	76,085	
Unwrought and part wrought.....do.....	21,854	
Iron—		
Ore.....do.....	64,668	
Pig.....do.....	1,498	
Bar.....do.....	6,087	
Iron and steel manufactures, etc.....cwt...	244,277	
Lead, pig and sheet.....tons...	11,602	
Pyrites of iron and copper.....do.....	260,123	
Tin in ingots, bars, slabs.....cwt...	19,616	
Zinc, crude, and manufactures of.....do.....	176,307	
Oil :		
Train, blubber and sperm.....tons...	2,624	
Olive.....do.....	4,450	
Palm.....cwt...	1,001,812	
Seed.....tons...	2,066	
Oil-seed cake.....do.....	76,047	
Onions.....bushels...	1,009,206	
Painters' colors.....		\$589,875
Paper of all kinds (except hangings).....cwt...	76,505	
Petroleum.....gallons...	23,825,854	
Provisions :		
Bacon and hams.....cwt...	2,663,551	
Beef, salted and fresh.....do.....	1,113,702	
Pork, salted and fresh.....do.....	141,415	
Mutton, fresh.....do.....	302,081	
Meat, unenumerated, preserved.....do.....	200,691	
Butter.....do.....	103,267	
Margarine.....do.....	388	
Cheese.....do.....	780,367	
Eggs.....great hundreds...	23,017	
Fish.....cwt...	511,707	
Lard.....do.....	758,553	
Potatoes.....do.....	41,904	
Rice.....do.....	3,191,704	
Rags and other materials for paper making.....tons...	67,027	
Saltpeter and cubic niter.....cwt...	786,149	
Seeds :		
Clover and grass.....do.....	18,431	
Cotton.....tons...	30,948	
Flaxseed.....quarters...	231,787	
Rape.....do.....	1,257	
Silk :		
Raw.....pounds...	23,389	
Manufactures.....		47,745
Skins—sheep and lambs', undressed.....number...	1,804,890	
Spices—pepper.....pounds...	432,865	

Statement showing the imports at the port of Liverpool, etc.—Continued.

Articles.	Quantity.	Value.
Spirits :		
Rum.....proof gallons...	792,802	
Brandy.....do.....	427,977	
Geneva.....do.....	50,224	
Other unsweetened spirits.....do.....	327,021	
Straw plaiting for hats.....pounds...	672	
Sugar :		
Refined.....cwt.s...	450,087	
Unrefined.....do.....	5,553,363	
Tallow and stearine.....do.....	509,969	
Tea.....pounds...	101,404	
Tobacco :		
Unmanufactured.....do.....	36,873,124	
Manufactured.....do.....	1,534,372	
Vegetables, raw.....		\$378,040
Wine.....gallons...	2,019,054	
Wood and timber :		
Hewn.....loads...	207,915	
Sawn or split.....do.....	647,138	
Staves.....do.....	26,315	
Mahogany.....tons...	12,679	
Wool :		
Sheep and lambs'.....pounds...	72,407,794	
Goats' wool or hair.....do.....	9,990,661	
Woolen goods :		
Yarn.....do.....	114,448	
Rags.....tons...	2,070	
Manufactures.....		470,295

EXPORTS.

Statement showing the exports at the port of Liverpool during the year ended December 31, 1889.

Articles.	Quantity.	Value.
Alkali.....cwt.s...	4,877,323	
Apparel.....		\$3,920,390
Arms and ammunition :		
Gunpowder.....pounds...	4,619,900	
Fire-arms (small).....number...	143,691	
Of all other sorts.....		1,051,635
Bags and sacks, empty.....dozens...	1,256,614	
Beer and ale.....barrels...	106,792	
Books (printed).....cwt.s...	47,136	
Butter.....do.....	22,706	
Candles of all sorts.....pounds...	2,529,600	
Caoutchouc, manufactures of.....		1,159,625
Cement, for building and engineering purposes.....tons...	7,082	
Chemical products or preparations, including dye-stuffs.....		5,186,485
Coal, coke, etc.....tons...	549,399	
Cotton yarn.....pounds...	109,746,900	
Cotton manufactures :		
Piece-goods.....yards...	3,915,718,300	
Of all other sorts.....		18,323,135
Earthen and china ware of all sorts.....		7,781,475
Fish—herrings.....barrels...	94,650	
Glass of all sorts.....		2,741,515

Statement showing the exports at the port of Liverpool, etc.—Continued.

Articles.	Quantity.	Value.
Haberdashery and millinery.....		\$3,993,885
Hardware and cutlery.....		6,809,950
Hats of all sorts.....dozens...	352,592	
Jute:		
Yarn.....pounds...	8,541,300	
Piece-goods.....yards...	37,813,000	
Leather:		
Unwrought.....cwts...	20,454	
Wrought—		
Boots, shoes, etc.....		2,052,810
Saddlery and harness.....		746,365
Linen:		
Yarn.....pounds...	5,133,300	
Manufactures—		
Piece-goods.....yards...	99,377,900	
Thread and unenumerated.....		4,232,215
Machinery and mill-work.....		27,159,235
Manure, chemical.....tons...	55,332	
Metal:		
Iron—		
Pig, puddled, bar, angle, and wire.....do....	252,376	
Railroad of all sorts.....do....	290,809	
Steel—		
Unwrought.....do....	33,953	
Of all other sorts, including manufactures.....do....	622,423	
Copper—		
Unwrought.....cwts...	79,759	
Wrought or manufactured, and yellow metal.....do....	215,760	
Lead of all sorts.....tons...	4,164	
Tin, unwrought.....cwts...	32,334	
Oil-seed.....tons...	8,956	
Painters' colors and materials.....		1,215,560
Paper of all sorts.....cwts...	110,870	
Provisions, including meat.....		1,318,070
Salt, rock and white.....tons...	582,905	
Silk:		
Thrown, twist, and yarn.....pounds...	319,944	
Manufactures of all sorts.....		7,916,730
Skins and furs of all sorts.....		3,146,955
Spirits, British and Irish.....proof gallons...	337,071	
Sugar, refined, and candy.....cwts...	393,036	
Telegraphic wires and apparatus.....		109,320
Wool, sheep and lambs'.....pounds...	7,831,400	
Woolen and worsted yarn.....do....	1,618,700	
Woolen and worsted manufactures:		
Woolen coatings and stuffs.....yards...	29,311,000	
Worsted coatings and stuffs.....do....	105,158,200	
Flannels and carpets.....do....	9,771,200	
Blankets.....pairs...	581,432	
Of all other sorts.....		820,607
Yarn (alpaca, mohair, and other sorts unenumerated).....pounds...	621,500	

NAVIGATION.

Table showing the number and tonnage of vessels entered and cleared at the port of Liverpool during the year ended December 30, 1889.

ENTERED.

From—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
Foreign countries and British possessions..	3,544	4,992,271	1,145	797,129	4,689	5,789,400
Coastwise	10,135	2,273,433	3,339	382,307	13,474	2,655,740
Total.....	13,679	7,265,704	4,484	1,179,436	18,163	8,445,140

CLEARED.

To—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
Foreign countries and British possessions..	3,046	4,408,769	1,018	738,259	4,064	5,147,028
Coastwise	10,377	2,750,165	3,196	398,482	13,573	3,148,647
Total.....	13,423	7,158,934	4,214	1,136,741	17,637	8,295,675

THOS. H. SHERMAN,
Consul.

UNITED STATES CONSULATE,
Liverpool, December 30, 1890.

AMERICAN BEEF IN SWITZERLAND.

REPORT BY CONSUL CATLIN, OF ZURICH.

A successful effort has just been made to introduce American beef into Switzerland, and last Sunday one of the principal hotels in this city, the Bellevue, had on its bill of fare the unusual announcement, "Viande Américaine de Chicago."

Hitherto the beef supply of this section has been drawn, to some extent, from the immediate vicinity (cantons Thurgau and Schaffhausen), and also from Austria-Hungary (via Arlberg), Germany, and Italy (via St. Gothard). A suggestion having been made to the Swiss Butchers' Association, an influential body extending all over Switzerland and having some five hundred members, that there might be a profit in the introduction of American beef cattle on the hoof from one or another of the great sea-ports, it was determined to make the experiment. A committee proceeded to Antwerp and purchased one hundred and ten Chicago beeves from a cargo arriving there by the steamer *De Ruyter*, which left New York November 1. The cattle reached Antwerp on the 16th, and at 10 p. m. on the following evening were shipped in eleven through cars as fast freight for Basle, reaching here

(Zurich) on the 20th at 5.30 p. m. in good condition and within less than three weeks from New York. The round price paid at Antwerp was 75 centimes (15 cents) per kilogram, or about 7 cents per English pound. The freight for the entire lot from Antwerp to Basle was 4,400 francs (\$849.20), which is rather higher than will be paid for subsequent shipments. The cattle found a ready market at once. Zurich took thirty; Basle, Bern, and St. Galle each twenty; and Winterthur and Brugg each ten head, and the beef was pronounced to be excellent in quality. It was sold off at the usual selling price (about 17 cents per pound), and proved quite inadequate to the demand which had been created by the news of the experiment being made. It is stated that the American beef could be delivered here at from 1 to 2 cents less per pound than the native Swiss beef can. The Austrian beef can be delivered at a cent or two cheaper still, but is said to be much inferior to the American meat in quality and flavor. Taken altogether, the results of the experiment have been extremely favorable, and, should there be no rise in the American market, it is quite probable the importation hither may become a steady and paying one. Any cattle dealers in America who desire further information in regard to the matter can obtain it by addressing Mr. C. Messing, No. 50 Lavaterstrasse, Enge-Zurich.

GEORGE L. CATLIN,

Consul.

UNITED STATES CONSULATE,

Zurich, December 1, 1890.

INCREASE OF SPANISH DUTIES.

REPORT BY CONSUL TURNER, OF CADIZ.

I have the honor to transmit a table showing the increase in the customs duties on agricultural products made by decree of the Queen Regent and published in the *Gaceta de Madrid*, the official paper of the Government, on the 25th instant. The provisions of the decree take effect January 1, 1891. The increase of duty on breadstuffs and provisions in the tariff schedule is of interest to United States commerce. Large quantities of these products now consumed in Spain come from the United States.

I might add that statistics will not reveal just what that quantity is, for dealers in these products buy them, not from the exporters of the United States, but almost entirely from English and other European jobbers. It has been my aim since coming here to encourage direct trade. I have succeeded in finding a representative for a large American meat-exporting house, and a direct trade in meat products has started. Three or four shipments of meats and lard have already been made by this firm direct to Cadiz, and every thing promises well for the enterprise. It will be easily recognized, however, just what the result on both direct and indirect trade in meat products will be when customs duties are increased from \$3 to \$10 per 100 kilograms on pork, bacon, hams, and lard.

I can not believe that such duties can be sustained. Under present conditions the struggle for bread and other sustenances of life is superlatively severe, and these duties will make it more so. No one who will examine the evidence can long doubt that the frightful mortality of Spain is largely due to a lack of wholesome food among the masses. Before this decree was affirmed few people of the working classes could find means to buy plenty of wholesome food; but, when it becomes operative, life and strength giving food in sufficient quantities will have passed beyond the reach of every laborer in Spain. He will only have it in sustaining quantities when the Government provides it in its efforts to ward off from an enfeebled class of people some such epidemic as cholera.

Table showing increase in customs duties on imports into Spain and Balearic Islands, to take effect January 1, 1891.

Articles.	Old rate.	New rate.
	<i>Pesetas.</i>	<i>Pesetas.</i>
Geldings above 1.47 meters in height.....per head...	128.30	180.00
All other horses and mares.....do.....	31.57	135.00
Mules.....do.....	19.60	80.00
Asses.....do.....	8.40	12.00
Cattle.....do.....	13.80	40.00
Swine.....do.....	8.45	20.00
Sheep and goats, and animals not expressed.....do.....	1.40	2.40
Salt and dried meats.....per 100 kilograms...	2.80	11.60
Pork, lard, bacon, and hams.....do.....	15.00	50.00
Other meats.....do.....	5.70	18.00
Rice:		
Not hulled.....do.....	4.00	5.30
Hulled.....do.....	8.00	10.60
Wheat *.....do.....	4.32	8.00
Wheat flour.....do.....	6.48	13.20
Other cereals in grain, except millet.....do.....	3.20	4.40
Their flours.....do.....	4.80	7.15

* This is also subject to transit and *consumo* duties.

All food supplies are subjected to *consumo* duties in addition to the general tariff.

R. D. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, December 29, 1890.

SHIP-BUILDING IN SCOTLAND.

REPORT BY CONSUL BROWN, OF GLASGOW.

Returns of ship-building for the year throughout the United Kingdom are just received. The output for 1890, in round numbers, is 1,271,000 tons, which is about 30,000 tons less than for 1889. The decrease falls far short of what was expected, even by the most sanguine, and is much less than

could have been expected, taking into account the condition of the trade for at least four months preceding August 1.

So few orders were booked for that period that very general uneasiness was felt and in some cases notices of reduction of both force and wages were given. The unusually large number of orders booked in August caused three notices to be withdrawn. August orders were well supplemented in September and October and a large output for the year assured.

The decline noted above was not an all-around one, the Clyde and other Scotch yards showing a positive increase of production.

The following figures are given for the United Kingdom, showing total tonnage launched for the years 1889 and 1890 :

Yards.	1890.	1889.
	<i>Tons.</i>	<i>Tons.</i>
Clyde.....	349,995	335,201
Forth.....	32,900	32,859
Dundee.....	24,494	18,311
Aberdeen.....	9,228	9,470
Tyne.....	235,567	281,710
Wear.....	197,482	217,336
Tees.....	127,741	110,436
Thames.....	17,000	8,000
Mersey.....	30,577	35,773
Barrow.....	24,665	26,847
Humber.....	9,217	12,689
Hartlepoons.....	99,847	85,875
Government dock-yards.....	22,520	36,155
Blythe and other English ports.....	10,000	.....
Welsh ports.....	2,500	.....
Belfast.....	66,783	83,003
Londonderry.....	10,594	7,268
Total.....	1,271,110	1,300,933

The following figures show the total tonnage launched at the leading ship-building centers of the Kingdom, with the relative increases and decreases :

Yards.	Total.	Increase.	Decrease.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Clyde.....	349,995	14,794	.....
Tyne.....	235,567	.....	46,143
Wear.....	197,482	.....	19,854
Tees.....	127,741	7,395	.....
Hartlepoons.....	99,847	13,972	.....
Belfast.....	66,783	.....	16,220
Mersey.....	30,566	.....	5,196
Barrow.....	24,665	.....	2,182
Dundee.....	24,494	6,183	.....

To the figures given above for the Clyde and Dundee add Aberdeen, 9,228 tons, and the Forth, 32,900 tons, and we have a total for Scotland of 416,617 tons as compared with 395,841 tons in 1889, being an increase of

20,776 tons. Of this increase for Scotland, the Clyde contributes 14,794 tons; Dundee, 6,183 tons. The Forth shows a slight increase and Aberdeen a slight decrease. The firms on the Clyde reporting the largest output are: Russell & Co., Greenock, 70,370 tons (this firm also leads all others in the United Kingdom); the Fairfield Company, 33,705 tons; Messrs. D. & W. Henderson, 21,195 tons; Barclay, Curtis & Co., 19,472 tons; Charles Cornell & Co., 19,012 tons; A. Stephen & Sons, 16,841 tons; Messrs. Caird, 16,318 tons; Messrs. Denny & Bros., 16,236 tons; Messrs. Scott, 15,632 tons; and Messrs. J. & G. Thomson, 14,000 tons.

The nationality of the owners of these new vessels is shown by the following table, Germany again (as last year) leading:

Country.	Number of vessels.	Tonnage.
Germany.....	13	45,317
Norway.....	18	19,727
France.....	8	12,940
Belgium.....	4	7,153
Spain.....	4	5,806
Greece.....	1	1,223
Portugal.....	1	699
North America.....	6	9,838
South America.....	14	7,485
Australia.....	11	16,670
China.....	2	3,996
Japan.....	2	2,990
South Africa.....	3	1,060
Other countries.....	6	3,040
London.....	37	65,183
Liverpool.....	25	46,015
British Government.....	2	7,900
English ports.....	22	12,058
Glasgow.....	65	89,801
Scotch ports.....	42	49,406
Ireland.....	6	5,229

The total number of vessels launched in all of the Scotch yards during the year was 286. Of this number, 216 were steamers and 70 sailing vessels, a larger percentage of sailing vessels than last year. Of the steamers, 12 were of over 4,000 tons and 37 between 2,500 and 4,000 tons. Of the sailing vessels, 8 were between 1,000 and 2,000 tons, 22 under 2,500 tons, 1 under 3,000 tons, and 1 close on 4,000 tons. The percentage of large steam-ships is less than last year and of large sailing vessels more than last year. The percentage of steel vessels is said to be greater, if any thing, than last year, when it reached 97.2.

MARINE ENGINEERING.

As was the case in 1889, all the steamers contracted in Scotland this year have been supplied with machinery from Scotch engineering establishments, and these establishments have supplied, in addition, engines for many ships not built in Scotland.

The following were the largest producers: Messrs. J. & G. Thomson turned out engines with an indicated horse-power of 44,300; Fairfield Company, 41,950; James Howden & Co., 41,010; W. Denny & Co., 37,850 the output of each of the above-named firms being very much in excess of 1889.

THE OUTLOOK.

As indicating the future of the trade, the following table showing the work on hand in Scotch yards is given in detail:

Yards.	Companies.	Tons.
Govan.....	Fairfield Company.....	37,300
	A. Stephen & Son.....	14,500
	R. Napier & Son.....	14,250
	London and Glasgow Company.....	10,200
Partick.....	Mackie & Thomson.....	1,200
	A. & J. Inglis.....	12,100
	D. & J. Henderson.....	12,500
Whiteinch.....	Barclay, Curle & Co.....	13,000
	Charles Connell & Co.....	4,500
Clydebank.....	J. & G. Thomson (limited).....	15,400
Renfrew.....	Lobnitz & Co.....	
	Simons & Co.....	4,000
Yoker.....	Napier, Shanks & Bell.....	
Paisley.....	J. McArthur & Co.....	
	Fleming & Ferguson.....	3,570
	John Fullerton & Co.....	965
	Hanna, Donald & Wilson.....	300
Bowling.....	Scott & Co.....	820
	W. Denny & Bros.....	14,000
Dumbarton.....	A. McMillan & Co.....	5,600
	Murray Brothers.....	
	Caird & Co.....	13,800
Greenock and Port Glasgow.....	Russell & Co.....	35,000
	Scott & Co.....	12,000
	D. J. Dunlop & Co.....	2,310
	John Reid & Co.....	
	Murdock & Murray.....	408
	Blackwood & Gordon.....	850
	R. Duncan & Co.....	7,300
	W. Hamilton & Co.....	9,000
Glasgow.....	T. B. Seath.....	1,000
	D. M. Cumming.....	109
	Alley & McLellan.....	435
Below Greenock.....	D. McGill (Irvine).....	240
	Adrossan.....	1,000
	McKnight (Ayr).....	1,060
Leith.....	Ramage & Ferguson.....	4,000
	Hawthorne & Co.....	1,000
Grangemouth.....	Dock-yard Company.....	18,000
Kinghome.....	John Scott & Co.....	1,380
Dundee.....	Gourlay Brothers.....	4,030
	Thompson & Co.....	4,058
	A. Stephen & Sons.....	3,000
Aberdeen.....	Hall, Russell & Co.....	5,045
	Duthie & Co.....	1,135
	Total.....	290,365

This large total is some 35,000 tons less than last year, and, while it represents eight or nine months' work, there is this difference as compared with last year: at the close of 1889 the yards were not only full, but a good deal of work was in prospect, inquiries remaining brisk; whereas it is said that orders now are few and far between. Then, freight had been reduced in some instances, but remained fairly firm; now, freights are in such a wretched condition that many owners are laying up their boats. It will be seen that the outlook is any thing but favorable; but, as was the case last year, the unexpected may happen and a marked improvement be the result.

L. W. BROWN,

Consul.

UNITED STATES CONSULATE,

Glasgow, December 26, 1890.

SABANILLA-MAGDALENA CANAL.

REPORT BY CONSUL NICKEUS, OF BARRANQUILLA.

Within the last thirty days the Government of the Republic of Colombia has conceded to Señor M. A. Fonsaca the exclusive privilege of constructing a canal from near Barranquilla, connecting the Magdalena River with the bay of Sabanilla. It is not known how long this canal will be, but not more than 10 nor less than 5 miles. Owing to the importance of this enterprise to commerce, I give herewith the salient points of the agreement:

(1) The canal will have a width of 20 meters (about 65½ feet) and not less than 3 meters in depth (nearly 10 feet).

(2) The Government grants an exclusive privilege for the period of forty years, during which time no other canal shall be constructed connecting the waters of the Magdalena River with Sabanilla Bay.

(3) The canal may be constructed from any point in Sabanilla Bay to any point on the said river lying between the station known as "Camacho" and the sea. The lagoons and streams lying within this region may be used for the purposes of the canal, but it is expressly understood that the mouth of the Magdalena River, known as the "Bocas de Ceniza," can not be utilized in the construction of the canal, nor can any work of any nature whatever be undertaken therein.

(4) The Government does not permit the exercise of any monopoly over the traffic of the canal, "since it is understood that the canal is to be constructed for the use and service of all and to afford greater facilities to the commerce of the country."

(5) During the term of said contract the canal company may collect a toll of transit for every loaded vessel which shall pass through it, not to exceed 25 per cent. of the present tariff of the Bolivar Railroad (the Bolivar Railroad tariff is from \$1.25 to \$5.40 per ton for a distance of 18 miles; this is as reasonable as the freight charges in the United States). Before

the canal is opened for transit the tariff of freight shall be approved by the Government, but it may thereafter be changed or modified by consent of the Government.

(6) The Government will have an interest of 20 per cent. in the net profits of the canal; but this does not imply any obligation on the part of the Government to contribute money or aid of any kind towards the construction of the canal or its equipment, or to respond in any manner for the results of the enterprise. No interest is guarantied on the capital stock by the Government.

(7) The 80 per cent. held by the owner or owners of the canal is not to be transferred to any foreign power or to any one whomsoever until the sanction of the Colombian Government is first obtained.

It will be observed that the contract fails to provide for the commencement of the work within any definite time, nor does it provide that the canal shall be completed within any specified time. Indeed, it would seem that the *concessionnaire* has forty years in which to construct the canal, during which time he may not allow any one else to construct one connecting these waters, and then, if he is so disposed, throw up the whole scheme; or he may fail to construct the canal, because it would interfere with the freights of the railroad running between Barranquilla and the bay of Sabanilla.

The people of this part of Colombia are much interested in the enterprise, because it would allow the fifteen steamers plying between this port and Honda, on the Magdalena River, to discharge their cargo at the port of shipment to the United States and Europe, instead of having to discharge at Barranquilla, 18 miles away, entailing the additional expense of reloading at Barranquilla aboard the railway cars and unloading again at the bay into lighters and from the lighters on board ship. All of this is, of course, a great expense to shippers, and would be avoided by the construction of the contemplated canal.

But the people of the United States are much more interested in the opening of the mouth of the Magdalena River, which would offer sailing vessels, as well as ocean steamers, a way into this port (Barranquilla) by way of the river mentioned. Some years ago, the merchants tell me, the Magdalena at this point was white with American sails, fifteen or twenty sailing vessels and many steamers being constantly at the wharves of this city from our country, unloading lumber, corn, ice, flour, salt, corned beef, pork, etc. Now, since the closing of the mouth of the river, not a single vessel of any description bearing the Stars and Stripes ever touches this port. There is not in this city of 30,000 people, through which the imports and exports of more than 3,000,000 people are made, a pound of either pork, corned beef, or salt nor a foot of lumber from the United States. And why? Principally, with reference to most of the articles mentioned, because it costs more to ship these goods 18 miles over the railroad from the bay of Sabanilla to Barranquilla than it formerly cost to get the same goods from New York, North Carolina, and Louisiana to Barranquilla by sailing vessels. I refer to the

time when sailing vessels could come up the Magdalena River for more than 100 miles. However, if the contemplated canal shall be of sufficient depth to allow sailing vessels to pass, the people of our country will be considerably benefited thereby. It is with this view of the enterprise that I have deemed it of sufficient public interest to write the Department regarding it.

The map showing Sabanilla Bay, the Magdalena River, Barranquilla, and the country through which the proposed canal is to be constructed will be found on page 90, CONSULAR REPORTS No. 92, April, 1888.

JOHNSON NICKEUS,

Consul.

UNITED STATES CONSULATE,

Barranquilla, December 6, 1890.

FARM HOLDINGS IN GREAT BRITAIN.

REPORT BY CONSUL BRUCE, OF LEITH.

Some interesting figures as to the occupiers of land in Great Britain and the marked increase of arable land since 1870 are attainable from the recent agricultural returns of Great Britain for 1890. It is stated that the total number of returns from occupiers of land, on which the figures now submitted for Great Britain are based, is 577,841. This is the largest total yet reported, and compares with 574,840 returns in 1889, 570,206 in 1888, and 563,119 in 1887. These totals suggest a slight increase in the number of persons occupying land. This tendency is, indeed, once more the subject of special comment by the collectors, who frequently attribute their augmented returns to an extension of the process of subdivision of holdings which has been going on in recent years. The returns from owners of live stock who do not occupy land are this year 4,217, against 4,376 in 1889.

The cultivated surface of Great Britain recorded as farmed by its owners is 4,843,000 acres, against 4,852,000 acres last year, while that accounted for as in the hands of tenants is 27,925,000 acres, against 27,881,000 acres last year. The general decrease of owner-farmed land, which distinguishes the country as a whole, appears to be relatively more marked in Scotland than in England.

The area accounted for in Great Britain in the present table as under crops, bare fallow, and grass is 32,768,000 acres. This is an increase of 35,000 acres over the corresponding area in 1889. Although comparatively insignificant on the present occasion, this increase of so-called cultivated area has been an annual feature of these returns, and one which has occasioned considerable inquiry. The cultivated area reported on in 1890 is 666,000 acres greater than that returned in 1880 and 2,361,000 greater than that of 1870.

A material and continuous shrinkage of the land under the plow has now been in progress for the last eighteen years, accompanied by a continuous

and still larger extension of the recorded grass area ; but the arable area is still the greater of the two, if Great Britain be regarded as a whole. This is not quite the case, if the English figures be viewed by themselves.

Practically one-half of the arable area remains under grain, but the proportion of grain crops to arable land (itself, it must be remembered, a diminishing quantity) declined from 52 per cent. in 1870 to 50 per cent. in 1880 and 48 per cent. in 1890. Green crops have continued to cover nearly one-fifth of the arable area each year of the three. But the proportion of clover and grasses under rotation has exhibited, as has been repeatedly noted, a material increase. The ratio was $24\frac{1}{2}$ per cent. in 1870, 25 per cent. in 1880, and $28\frac{1}{2}$ per cent. in 1890. The proportion of bare fallow was $3\frac{1}{2}$ per cent. in 1870 and 3 per cent. in 1890. The 8,033,000 acres now returned under corn crops compare with 8,075,000 acres in 1889. This total is 1,000,000 acres below the average grain-cropped area of the five years ending with 1880.

In only two years has the wheat area been smaller than it now is, viz, 1886 and 1887, when 2,286,000 acres and 2,317,000 acres were recorded. Most of the rise exhibited in 1888 has now been lost, and, comparing the present year's total—2,386,000 acres—with that of the mean for the five years ending with 1880, the decline is almost exactly 650,000 acres. If the comparison be made with a still earlier group of five years, 1871-'75—a period anterior to the recent depression—the loss is 1,140,000 acres, or nearly 1 acre in every 3. This decline in wheat growing has been long in progress. If the wheat area of the three years 1870, 1880, and 1890 be compared, it will be seen that the absolute decline on the first decade actually exceeded that which has taken place since, for 591,000 acres were lost between 1870 and 1880, against 523,000 acres since that year. The decline is, no doubt, attributable to the fall in the price of wheat, which is now not much more than half what it was in the years immediately following 1870.

The area under barley in Great Britain in 1890 was 2,111,000 acres. This is a decrease of 10,000 acres from last year's figures. The decline is visible only in Scotland and Wales, the English area being practically as before. The present surface under barley in Great Britain is greater by some 26,000 acres than in 1888 or 1887, but it is less than prevailed before those years.

Oats now cover 14,000 acres more than in 1889, or a total of 2,903,000 acres for Great Britain. In the last two years it is to be noted that the growing of oats has distinctly extended in England and notably in the eastern counties, and in a larger degree than the above figures show, since both in Scotland and Wales, especially in the latter, the oat area has been reduced.

The only noticeable decline in this section of the year's acreage is in the potato crop, of which 50,000 fewer acres have been grown, the total for Great Britain being 530,000 acres. The collectors agree in ascribing this uniform decrease to the low and unremunerative prices which were obtained for the large potato crop of 1889.

More turnips were apparently grown than in 1889 or 1888, but the total of this root in Great Britain remains below the average of 2,000,000 acres customary before 1887. The present year's return shows 1,948,000 acres.

In view of the attention recently called to the possibility, under certain circumstances, of again cultivating beet roots for sugar, it may be noticed that only 34 acres appear to have been grown in 1890. In 1871 a total area of 1,884 acres was returned as under sugar-beets.

The area left under bare fallow at the date of the collection of the returns (508,000 acres) shows a small decrease on the figures of 1889. Twice only, in 1887 and 1888, has the area thus returned been smaller. The area of Great Britain now accounted for under this head is, on the whole, less than in the years before 1884 by more than a third. An increasing area—more than sufficient to balance the decline in hops—is again reported as under small fruit, embracing strawberries, gooseberries, currants, etc., under this title. The surface returned as occupied in this way is 46,200 acres, or an increase of 4,300 acres. The practice of fruit growing is certainly extending both in England and Scotland, and the reports of the collectors contain references to the development of this branch of agricultural industry in new localities, and to the provision of local facilities for disposing of the produce by jam factories and arrangements for preserving the fruit.

Clover and rotation grasses show a small decline in acreage from the relatively high figure returned in 1889, the present area for Great Britain being 4,809,000 acres, against 4,877,000 acres last year. It is noteworthy that a large and material decline in the proportion of these rotation grasses kept for hay is reported this year, 184,500 fewer acres being so kept out of a total in itself reduced. If to this reduction there be added 1,208,800 fewer acres of permanent grass set aside for hay this year, hay must have been cut on nearly 400,000 fewer acres than in the immediately preceding season.

The record of live stock in Great Britain in 1890 is the most satisfactory presented for many years. The total number of horses kept solely for agriculture (981,000) shows, indeed, very little difference from previous years. There is apparent a small increase in England, with a decrease in Wales and Scotland. The number of cows and heifers in milk or in calf now returned is 2,538,000, a figure approached, indeed, in 1885, 1886, and 1887, but not met with before or since. The breeding stock now returned is thus greater by over 100,000 head than in 1889. The increase is apparent in every county in England except Middlesex, in every county of Wales, and in most counties in Scotland. The collectors attribute the improvement to a growing conviction on the part of farmers of profit to be made from the breeding of stock and an extended demand for milk. A decrease of other cattle over two years old is apparent in England and Wales. There is, however, an increase in Scotland. Some part of the decrease under this head would seem due to the earlier maturity of the stock sent to the butcher. Cattle under two years old exhibit a very remarkable and general increase in the present year, amounting to 279,000 head and bringing up the total to 2,532,000.

Compared with the average number returned in the decade ending 1880, the present figures exhibit an increase of over 300,000 head.

A very important increase is also exhibited in the number of sheep and lambs. The number of sheep of one year old and upward is returned as 16,757,000, or 894,000 more than in 1889, only one or two counties failing to join in the general advance. In lambs the increase is relatively greater still, a total of 10,516,000 head being enumerated, and the increase over 1889 being 746,000, or 7.6 per cent.

The total sheep stock of Great Britain (27,272,000) is now greater than in any year since 1879, a recovery of nearly 3,000,000 head being apparent since the losses of the period 1879-'82 left it with only 24,320,000 sheep in the last of these years. Two-thirds of this addition to the flocks, or an increase of 2,000,000, has occurred in the last two seasons.

WALLACE BRUCE,
Consul.

UNITED STATES CONSULATE,
Leith, December 31, 1890.

PUBLIC SCHOOLS IN SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

I inclose herewith a few statistics relating to public instruction in Spain. The first inclosure is a statement showing the amount owed to the public school-teachers of Spain for services rendered prior to June 30, 1890. In calling attention to this I might add that it is a non-interest-bearing debt, and for that reason is subjected to a heavy discount when placed on the market by teachers too poor to carry it.

The second inclosure consists of two tables, the first showing the number of public schools of Cadiz, number of pupils enrolled, and annual expenditures for school purposes, the second showing the number of teachers and their annual salaries.

I am informed that Cadiz is much in advance of her sister cities in the matter of public education, hence this last-mentioned inclosure becomes a fair mint for estimating the educational advantages of other cities.

There are no country schools in Spain, and those of villages are few and unimportant.

It will be seen by this inclosure that Cadiz, with a population of about 60,000, employs forty-five teachers, paying them salaries aggregating 78,225 pesetas and house-rent equivalent to 5,600 pesetas. It is thus seen that the average salary is equivalent to \$335.50 per annum, the lowest being 500 pesetas, or \$96.50, and the highest 3,250 pesetas, or \$627.25.

The annual expenditure for material is 8,845 pesetas, or \$1,707.08, and for rent of buildings 14,600 pesetas, or \$2,817.80. The total expenditures for the schools of Cadiz reach annually the sum of 107,270 pesetas, or

\$20,703.11. The number of pupils enrolled is twenty-four hundred and twenty.

The foregoing information was kindly sent to me by the city government in a communication dated November 13, 1890.

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, November 13, 1890.

DEBT TO THE TEACHERS.

[Inclosure 1 in Consul Turner's report.—From La Dinastia of November 12, 1890.]

To-day the *direccion general de instruccion publica* publishes in the Gaceta a statement of the amount owed to primary teachers for work done previous to June 30, 1890. The total amounts to 9,108,837.36 pesetas, divided as follows:

Description.	To July 1, 1889.	Fiscal year 1889-'90.	
		First three quarters.	Fourth quarter.
	<i>Pesetas.</i>	<i>Pesetas.</i>	<i>Pesetas.</i>
Personal service.....	2,843,587.88	1,058,740.06	2,740,274.45
Material furnished.....	1,168,361.80	421,411.57	876,161.60
Total.....	4,012,249.68	1,480,151.63	3,616,436.05

PUBLIC SCHOOLS OF CADIZ.

[Inclosure 2 in Consul Turner's report.]

Table showing number of public schools, number of pupils, and annual expenditures.

Name of school.	Pupils enrolled.	House-rent furnished teachers.	Material for teaching.	Rent of building.
		<i>Pesetas.</i>	<i>Pesetas.</i>	<i>Pesetas.</i>
Normal.....	150	500	625	(*)
San Ildefonso.....	210	500	500	(*)
San Francisco.....	140	.....	500	1,980
La Palma.....	200	500	500	1,500
Santiago.....	150	.....	500	1,680
Santa Maria.....	200	500	500	1,250
San José.....	120	500	500	465
Adults.....	100	.....	1,300	1,500
San Servando (for little boys)	200	500	750	(*)
San German (for little boys).....	150	600	750	1,500
Normal (girls).....	150	500	520	(*)
Concepcion	200	.....	500	1,500
Santa Isabel.....	200	.....	500	1,740
Rosario.....	150	500	500	960
San José.....	100	500	500	465
Total.....	2,420	5,600	8,845	14,600

*Owned by the public.

Table showing number of teachers and their annual salaries.

Name of school.	Classification of teachers.	Annual salaries.
		<i>Pescetas.</i>
Normal.....	1 director.....	3,000
	1 assistant.....	2,000
	1 conveyer.....	500
San Ildefonso.....	1 director.....	2,750
	1 assistant.....	1,100
	3 assistants at 750 pesetas.....	2,250
San Francisco.....	1 director.....	2,750
	1 assistant.....	1,100
	2 assistants at 750 pesetas.....	1,500
La Palma.....	1 director.....	2,750
	1 assistant.....	1,100
	3 assistants at 750 pesetas.....	2,250
Santiago.....	1 director.....	2,750
	1 assistant.....	1,100
	2 assistants at 750 pesetas.....	1,500
Santa Maria.....	1 director.....	2,750
	1 assistant.....	1,100
	2 assistants at 750 pesetas.....	1,500
San José.....	1 director.....	2,750
	1 assistant.....	750
Adults.....	1 director.....	2,750
	1 assistant.....	1,100
	1 porter.....	750
San Servando (for little boys).....	1 director.....	3,250
	1 assistant.....	1,100
	1 porter.....	500
San German (for little boys).....	1 director.....	3,250
	1 assistant.....	750
Normal (girls).....	1 director.....	3,000
	1 assistant.....	1,725
	2 conveyers at 400 pesetas.....	800
	1 servant.....	125
Concepcion.....	1 director.....	2,750
	1 assistant.....	1,100
	.....do.....	825
	2 conveyers at 400 pesetas.....	800
Santa Isabel.....	1 directress.....	2,750
	1 assistant.....	1,100
	.....do.....	825
	2 conveyers at 400 pesetas.....	800
Rosario.....	1 directress.....	2,750
	1 assistant.....	1,100
	.....do.....	825
	2 conveyers at 400 pesetas.....	800
San José.....	1 directress.....	2,750
	1 assistant.....	1,100
	.....do.....	1,000
Total.....		78,225

THE NICARAGUAN CANAL.

REPORT BY CONSUL NEWELL, OF MANAGUA.

I have the honor to inclose herewith the report of the commission designated to make the annual settlement of the Nicaraguan Canal.

WILLIAM NEWELL,
Consul

UNITED STATES CONSULATE,
Managua, November 14, 1890.

REPORT OF MESSRS. ROMAN AND SONNENSTERN.

[Inclosure in Consul Newell's report.—Translation.]

To the Minister of Public Works of the Government of the Republic :

HONORABLE MR. MINISTER : In discharge of the commission conferred upon us under date of the 4th of October last we have made the liquidation of expenditures incurred by the constructing company of the Inter-oceanic Canal of Nicaragua from the formal inauguration of the work on the 8th of October, 1889, to the 7th of last month, and with the present communication we have the honor to transmit to you the document in which the data relating thereto have been condensed in the form of a general account.

Immediately after our arrival at San Juan del Norte we had our first interview with the engineer-in-chief of the works of the canal, and we agreed that employés of the company should prepare the accounts, with their corresponding vouchers, in their separate order as recorded in the books, so as to be able to expedite their examination and verification, which we were to do at the proper time. Meanwhile we employed ourselves in visiting the works undertaken by the company up to that time, in regard to which we shall make you a brief report, based on our observations and the data furnished us by the engineer-in-chief and the division engineer, Mr. Davis, so that the Government may be able to appreciate the efforts of the company to carry out a work in which not only the professional honor of the engineers who have undertaken it is concerned, but also the good name of North Americans.

In all our excursions we were satisfactorily impressed by the advanced stage of some of the works whose initiation we witnessed about the end of last year and others undertaken afterwards. Now we note an impulse in the works, which ought to satisfy even the most exacting persons.

As soon as we were satisfied that we could visit the offices of accountability to examine the books and documents upon which the accounts are founded, we undertook that work, associated with the special auditor, Mr. Macrae, representing the company, a person than whom no more appropriate selection could have been made for such a delicate operation, as well because of his competence as for his affability in placing before us with promptitude worthy of the highest praise even the most insignificant details relative to the entries which in each specification show the expenditures made by the company.

The order and care shown by the accounts referred to are, Mr. Minister, indeed admirable, and, in order that you may form an idea of the operations, it was necessary to undertake to obtain in summary the figures of each department of expenditures.

In the examination of the vouchers we found deficiency of documents only in the following : (1) The purchase of the dredges and other material coming from Colon, (2) the acquisition of the navigation line of Lake Nicaragua and river San Juan, (3) the purchase of the Scotch dredge, and (4) the expenses of administration in New York.

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But in these respects we were informed that the contract relating thereto is in possession of the company, and that, in regard to office expenses of the company, the data therefor had been recently received by mail.

In support of these assertions we have to record the following:

(1) That, of the seven dredges said to have been purchased in Colon, five are now in the bay of San Juan del Norte, one of which has been at work in the port of the canal since the 18th of October last.

(2) That a large part of the material mentioned in the inventory relating to the purchase of the dredges, and of which we inclose a copy, has been arriving by the steamers employed expressly in its transportation. Among the material there are objects of great value and in sufficient quantities to supply the workshops during the whole period of canal construction.

(3) In regard to the Scotch dredge, we were shown a letter in which the company are advised of its departure for San Juan del Norte on the 6th of October.

(4) That, in regard to the purchase of the interior navigation line, it is a well-known fact that the administration of that enterprise is in charge of the aforesaid canal company.

We had also to object to the adoption of a fixed rate (40 per cent.) of exchange between American gold and the money of this country, when for some time past the premium has been much lower.

Upon this point we were shown that for some time the premium was higher, and, to obviate the multitude of operations which would attend the conversion of gold to money of the country at a varying rate, the one rate was adopted as an average; and, on the other hand, the payment of \$50,000 (gold) by the company to the Government in September last, in fulfillment of a clause in article 20 of the contract, was charged at 25 per cent., the then current rate.

As this was a secondary detail, inasmuch as it would in no case reduce the total amount of expenditures to less than \$2,000,000 which the company was obliged to expend during the first year, we accepted this rate, with the reserve of making it known to the Government.

The engineer-in-chief exhibited to us an account which the New York office had remitted him, in which appear expenditures made there up to the 7th of October, of which he had no knowledge, amounting to \$3,092,117.20 in American gold. But, as this account is not in detail nor authenticated, we merely mention it, submitting to the consideration of the Government the account which is the principal object of this report. But we deem it our duty not to pass over in silence the fact that the day after the closing of the accounts steamers arrived at the port of San Juan whose cargoes, according to the bills of lading, could not have been worth less than \$100,000.

We proceed now to speak, although briefly, of the works carried out by the canal company up to the 7th of October last and of those in the course of execution.

ENGINEERING SURVEYS.

Those relating to the definite location of the route of the canal have terminated, and it only remains to finish those relating to certain details for the construction of dams and locks and some terre-pleins. The studies have also terminated for the location of the railway up to Ochoa, the installation of the aqueduct from Rio Pax, distant some 12 miles from the canal, and for the construction of a dam which will maintain the waters at an elevation of 115 feet above the level of the sea, a work which is considered of indispensable necessity for the supply of potable water in that region, in which that now used has not the requisite conditions required by public hygiene.

The hydrographic studies may be considered as terminated; but, owing to the frequent changes the bay of San Juan undergoes, it is necessary to maintain constantly a personnel to note the changes on the plans.

All of the studies have been made with care and verified more than once by different corps of competent engineers to ascertain with exactness that the smallest topographical details,

which may contribute to the best solution of the problem of execution of the great work, shall not fail to be noted.

Their labors have been generally very difficult, as the operations have been made in dense and uninhabited forest, in transverse sections as much as 27 miles from the adopted line for the canal, and in many parts through swamps of 5 feet in depth.

BUILDINGS.

For the preliminary works and for the final works, the necessary buildings have been constructed for the lodgings of the employés and workmen, for warehouses, shops, and offices, the principal ones being those of Camp "Cheney," and the breakwater, Camp "Treat" of the railway, "La Fé," a large warehouse for provisions, the principal offices and buildings for the hospital service, whose cost, including that of the houses and ranches established at several points on the line of the canal, exceeds \$80,000. Besides, they are constructing a building of 108 by 54 feet for a machine-shop, another of 52 by 28 feet for a blacksmith shop and foundry, and another of two stories, 57 by 49 feet, for lodging of employés. All these buildings are of selected lumber, of good construction, painted, and with iron roofing.

CLEANING OF STREAMS.

The principal obstructions to the free navigation of the lagoons San Juan, Silico, and Bernard, the river San Juanillo, the Deseado, and a number of creeks have been removed up to a distance of 30 miles from the port. This has been necessary in order to shorten distances and to facilitate operations and transportation of provisions and working material.

TELEGRAPHIC LINE.

One of the first works undertaken by the company is the installation of a telegraphic line between the principal offices situated near the mouth of the canal, on the Atlantic, and El Castillo, say some 60 miles distant. Later it will be placed, with better conditions and with the prospects of more satisfactory results, at the opening of the railway.

BREAKWATER.

Since December of 1889 the construction of a breakwater was commenced on the sea-coast for the protection of the entrance of vessels to the port of the canal, which the company makes out of a part of the area of what was once the bay of San Juan del Norte, near the old bar. Its length will be 1,900 feet, of which 800 feet are already finished; its width is 42 feet, and its height is 7 feet above the level of the ocean. The work is of wood creosoted in the proportion of 16 pounds of the oil to each cubic foot, and is very solid; the greater part of the pieces are 14 inches in thickness.

BANANA AND PASTURE RANCH.

At Camp Menocal they have made a plantation, which at present consists of only a few "manzanas" of land in grass and bananas. It is proposed to extend it when the works at Ochoa and on the locks are about to be undertaken.

CLEARING FOR THE CANAL.

In January of the present year the opening for the excavation of the canal was commenced, and there are now 11 miles cleared, with a width of 480 feet, through swamps of 64 inches in depth. On the axis of the canal and on some other points of the coast the company has made ditches for draining, and the result of this has been the drying up of a great portion of the swamp, which will soon permit the establishment of agricultural plantations. The clearing from Las Lajas to Brito has been contracted, and we know that the moment is at hand for undertaking this work.

RAILWAY TO OCHOA.

In June the railway from the port of the canal to Ochoa was commenced; $4\frac{1}{2}$ miles are already finished, $5\frac{1}{2}$ are ready to receive cross-ties and rails, and the material is on hand for 7 miles more, so that very soon half of the distance—to the point where the canal will follow the natural course of the river San Juan—will have been finished. One of the drawbacks to the progress of this work has been the gradings for a distance of 6 miles through marshes of 3 to 5 feet in depth.

For crossing the San Juanillo they have constructed a bridge of 180 feet in length by 10 feet in height, but the bed of the stream is so soft that it has been necessary to drive piles to the depth of 90 feet to reach a solid foundation for the flooring of the bridge.

The material for the grading has been taken principally from the mouth of the canal, where there is a portable steam excavator with a capacity of 1,500 cubic yards per day. Two trains of fifteen cars each are employed in transporting it over the railway in construction. Up to the 7th of October 280,000 cubic yards of grading had been thus deposited. Up to the present the cross-ties and all the timbers used have been imported from the United States, as there are no solid woods in that region.

The creosote cross-ties cost 80 cents (gold) each delivered at San Juan del Norte and the girders, cross-pieces, and piles for the bridges, breakwater, etc., cost from \$2.25 to \$75 each piece.

RAILWAY WHARF.

This is being constructed in a remarkably solid and stable manner on the right bank of the canal and in connection with the railway. It is of creosote wood, and will extend some 600 feet into the port to enable sea-going vessels and steamers to lay alongside. The works we saw undertaken during the last days of our stay at San Juan del Norte satisfied us that within a month from the date vessels of great draft, like the steamers of the American lines, will enter the port of the canal now in construction.

An extension of the railway to the breakwater across the lagoon San Juan is also being constructed. The object is to afford ready transportation of rock material for that work. A quarter of a mile of railway from the latter has already been made, and will be continued upon wooden piles in stretches of 10 feet until it reaches the mainland, where it will unite with the railway in construction. As this work is the subject of a special report, we shall say no more on the subject at present.

DREDGES, ETC.

Of the seven dredges purchased of the American company which for some years had contracts for dredging at Colon, five are at San Juan del Norte, and, of them, one, the *City of Paris*, commenced to dredge in the port on the 18th of October ultimo a channel of 120 feet in width by 20 feet in depth. On the morning of the 30th ultimo, the day of our departure, it had completed 1,500 feet of excavations and had removed 12,000 cubic yards of material. These apparatus are of 1,800 tons capacity and have engines of 600 horse-power. At the time we are writing two more dredges should be at work or nearly ready to commence dredging operations, and this month the others will be at work.

On the other hand, the American company has a Herbert suction dredge in the port and is awaiting the arrival of two others, with their respective tugs and launches, to carry out their contract of 1,500,000 cubic yards of dredging.

The material purchased in Colon comprises, as the inventory shows, dredges, tug-boats, lighters, machinery for the dock-yard, and a large quantity of material of every description for the works. It is being carried to San Juan by the steamers *Jones* and *River Mersey*, chartered expressly for the purpose, the former at \$185 per day and the latter at £900 per month.

WAREHOUSES OF SUPPLIES AND MATERIAL.

There are deposited in the warehouses and in special storehouses an abundance of provisions, food, equipments, tools, and utensils and a great quantity of machinery and building

materials for the works which will be undertaken hereafter. The articles are all of the first class, and of such condition that those intended for mechanical operations simplify, facilitate, and economize labor.

PERSONNEL EMPLOYED IN THE WORK.

The total number of laborers employed has varied from 400 to 1,900 daily and the officials and foremen from 125 to 300. At present there are 1,700 of the former and 160 of the latter. The engineers are mostly Americans and Spanish Americans. The officials and mechanics comprise persons of different nationalities, especially Europeans, and the laborers are almost wholly from the West Indies and the Atlantic coast of Central America.

LODGINGS AND MAINTENANCE.

The impossibility, up to the present, of contracting this service or of leaving to each individual to make his own arrangements, owing to the fact of the work being carried on in uninhabitable places, where there are no public means of communication, has obliged the company to provide lodgings and maintenance for their laborers and employés. Those who decline to receive these services as to-day established will receive an increase of their monthly pay and will be free to provide for themselves on their own account.

HOSPITAL.

This department might well be made the subject of a special study, so interesting are the conditions upon which it is established; but, for the purposes of this report, we will limit ourselves to state that the central hospital, which the company has established, constitutes a guaranty and an inducement for those coming to that coast to render their contingent of labor on the canal. There are several buildings of solid and elegant construction, with many departments and a numerous and efficient corps of service. The following data serve to prove our assertions: It is sixteen months since the hospital was established; in that period more than two thousand sick from different places have been admitted, and there have been fifteen deaths only. In the company's register twenty-six cases are noted; but six of these relate to invalids not engaged upon works of the canal, and five deaths were caused by accidents.

CONCLUSION.

It remains for us to mention a fact which shows clearly the success which follows the company in all the engineering works it has undertaken and the benefits which the inhabitants of that district are receiving. We refer particularly to the result obtained by the construction of the breakwater. The accumulation of sand and sediment of every description, which the river San Juan carries to the sea, is now carried by the surf to the right side of the breakwater; this gives it a perpetual stability, while on the left side there was a bank of sand which had obstructed for many years the flow of the waters of the river over the old bar. As the breakwater has been extended into the sea, the waters have opened a pass through the sand bank and have formed a navigable channel 600 feet in width and from 6 to 8 feet in depth. By this natural channel the steamer *Carazo*, the dredges, tug-boats, and small schooners now enter; and by the same channel, also, when deepened by the dredges, as is now being done in order to obtain a depth of 20 feet, vessels and steamers of large draft will enter in a short time, that place being the future entrance to the port of the canal on the Atlantic.

Such, Mr. Minister, are the data we have deemed it our duty to bring to the knowledge of the Supreme Government in fulfillment of the commission with which we had the honor of being intrusted.

We are, with all respect, your obedient servants,

(Signed,)

J. A. ROMAN.

MAXMILANO SONNENSTERN.

AMERICAN PRODUCTS IN SWITZERLAND.

REPORT BY CONSUL ADAMS, OF Horgen.

The Neue Zürcher Zeitung has recently made a careful computation of the values of imports into Switzerland from the United States in correction of the statistics published by the Federal Government. The latter are compiled from the custom-house entries, which, it is intimated, habitually undervalue imported goods.

The sources of correction are the statistics of Swiss manufacturers, which give, approximately, the proportions of raw material imported from different countries. It is known, for example, that, of the whole amount of raw cotton worked up by the Swiss mills, 65 per cent. comes from the United States, 25 per cent. from Egypt, and the remaining 10 per cent. from all other sources. Of leaf tobacco for cigars, etc., at least two-thirds came from the United States; of petroleum, at least one-half. Applying these proportions to the total importation from all countries, as given by the federal tables, the Neue Zürcher Zeitung obtains the following figures for the imports from the United States since 1885:

Articles.	1885.	1886.	1887.	1888.	1889.
Cotton.....	\$4,303,900	\$3,435,400	\$4,882,900	\$4,053,000	\$5,519,800
Lard.....	317,485	530,750	594,440	409,160	601,195
Leather.....	289,500	289,500	289,500	289,500	289,500
Petroleum.....	752,700	907,100	926,400	829,900	733,400
Salted meat.....	69,480	113,870	130,275	101,325	197,825
Tobacco, leaf.....	752,700	675,500	675,500	733,400	714,100
Miscellaneous.....	212,300	384,070	475,745	304,940	258,620
Total.....	6,698,065	6,336,190	7,974,760	6,721,225	8,314,440
Total according to federal statistics...	3,441,190	4,101,250	5,659,725	4,236,350	4,879,040

The following table gives the values of the principal imports from the United States for 1889, according to the Neue Zürcher Zeitung, compared with the total importation, according to the federal statistics uncorrected:

Articles.	Imports from the United States, according to Neue Zürcher Zeitung.	Total imports, according to federal statistics.
Cotton.....	\$5,519,800	\$5,488,140
Lard.....	601,195	630,338
Leather.....	289,500	2,066,654
Petroleum.....	733,400	1,482,433
Salted meat.....	197,825	256,076
Tobacco, leaf.....	714,100	1,076,861

It should be observed, however, that the federal statistics of the total importation are equally exposed to criticism, since they are compiled from the same defective custom-house declarations. The proportion of imports from the United States to those from all sources is therefore less than that shown by the last table.

It will be seen that the importations of American cotton, lard, and salted meat have increased since 1885. Leather is stationary and leaf tobacco has fallen off slightly. Petroleum has fallen off rapidly since 1887, owing to the competition of Russia. The importation of American grain, of great importance ten years ago, has nearly ceased, owing to cost of freights; its place is taken by the imports from Russia, Hungary, and the Danubian provinces. Among the miscellaneous articles imported are machines and hardware, meat extracts, cigars and cigarettes, animal hair, wood, vegetable oils, scientific instruments, dye-woods, dye-stuffs, etc.

The *Neue Zürcher Zeitung* concludes that the volume of the importation from the United States will remain about as it is for some years to come.

LYELL T. ADAMS,

Consul.

UNITED STATES CONSULATE,

Horgen, November 4, 1890.

COMMERCE AND INDUSTRIES OF GUAYMAS.

REPORT BY CONSUL WILLARD.

THE STATE OF SONORA.

This consular district formerly embraced the entire state of Sonora, but was divided during the past year into two consular districts, that of Nogales being formed of the northern portion bordering on the United States (Arizona) and extending south, approximating to the center of the state, its eastern portion bounded by the state of Chihuahua, and west by the Gulf of California and the Colorado River, comprising four political divisions, or counties, named Altar, Magdalena, Arispe, and Moctezuma. Its estimated area is 65,000 square miles, with a population approximating 50,000 souls. The remaining portion of the state forms that of Guaymas, embracing five political divisions, or counties, viz, Ures, Hermosillo, Sahuaripa, Guaymas, and Alamos, bounded on the north by the Nogales consular district, south by the Gulf of California, and east by the states of Chihuahua and Sinaloa; estimated area, 65,000 square miles; population, 100,000, more or less. With the exception of the state of Chihuahua, Sonora has the largest area of any one state of the Mexican Republic.

Nogales, on the frontier of Mexico and the United States, is the principal inland port of entry of the new consular district, and is at the termini of the Sonora and of the Arizona and New Mexico railways, which meet at the frontier.

Guaymas, on the Gulf of California, is the only port of entry of the consular district of Guaymas. This portion of Mexico draws a great part of its foreign supplies from the United States. Nogales being in direct communication by rail with the large commercial centers of the United States, a portion of the imports and exports to and from this consular district is received and dispatched at that place.

In transmitting a report of the commerce of this district I have made an approximate estimate as to the values of imports and exports entered at Nogales belonging to this consular district, and not, as in former reports, embodied them in that of Guaymas. The commercial data that I have obtained through the courtesy of the collectors of the custom-houses of Guaymas and Nogales show an increase of the imports in both districts over that of the past year, those from the United States being in excess, as mentioned in former reports, of those from all other foreign countries.

The commerce of the coast is in the hands of the Mexican, German, French, and Spanish houses, no American wholesale importing houses existing.

IMPORTS.

There has been no change in regard to the class and character of the imports during the past year. They consist of cotton and woolen goods, hardware, groceries, machinery for mines, and lumber, mining machinery being imported almost exclusively from the United States and lumber entirely so, as mentioned in former reports. Duties are levied on weights and measures and not on values, which makes it difficult to obtain, except approximately, the values of importations. The values given in the annexed table of imports are placed at the current value (*valor de plaza*) after being landed and dispatched through the custom-house. A portion of the goods and machinery brought here are reshipped to portions of the Lower California coast across the Gulf of California.

The greater portion of the imports to the southern part of this consular district (Alamos) are brought from the port of Mazatlan after the goods are entered and duties paid (consular district of Mazatlan), being sent from that port on coasting vessels to the small port of Agiabampo, the coasting port for Alamos.

The value of American goods is somewhat less than in the past year, from the fact that more have been sent from Guaymas. The value of American goods can be estimated at \$100,000 and that of English goods at \$150,000. The classes of European merchandise—calicoes, ginghams, lawns, etc.—sent to this coast generally contain less material and are of brighter colors; cheaper, but not of as good quality as American merchandise of the same class, and sell more readily in the mining towns and out-of-the-way places in the agricultural districts.

The values of the imports, as furnished me, are as follows:

From the United States.....	\$1,472,431.87
From Europe.....	621,763.08
Total.....	2,094,194.95

The import laws remain without any change of importance to note during the year. It is expected that the Mexican Government during the coming twelve months, will issue a new tariff as to import duties.

Table showing the imports at Guaymas for the year ended December 31, 1890.

Description.	Quantity.	Value entered.
From the United States:	<i>Kilograms.</i>	
Agricultural and mining implements and lumber.....	117,366,704	\$575,770.80
Drugs and perfumery.....	121,194	32,069.70
Dry goods (linen, cotton, etc.).....	240,360	159,854.23
Glassware and crockery.....	173,997	57,885.64
Groceries.....	4,835,024	111,297.50
Hardware.....	652,684	166,439.00
Miscellaneous	238,749	49,095.00
Total	18,048,678	1,152,431.87
By rail via Nogales, not specified.....		*220,000.00
By Alamos via Mazatlan.....		100,000.00
Total from the United States.....		1,472,431.87
From Europe:		
Agricultural and mining implements.....	47,718	16,242.15
Drugs and perfumery.....	36,018	7,329.00
Dry goods (linen, cotton, etc.).....	221,800	157,042.05
Glassware and crockery.....	203,719	27,770.28
Groceries.....	317,457	43,729.98
Hardware.....	242,282	17,320.12
Miscellaneous	205,843	42,329.50
Total	1,274,837	311,763.08
By rail in transit via Nogales.....		*160,000.00
By Alamos via Mazatlan.....		150,000.00
Total from Europe.....		621,763.08
Grand total.....		2,094,194.95

* Approximately.

The duties collected at Guaymas were as follows: On imports from the United States, \$245,179.80; imports from Europe, \$123,657.77.

The report from the consul at Nogales will give the imports of what was previously the northern portion of the Guaymas consular district.

EXPORTS.

The exports from this consular district, consisting of gold and silver bullion, silver dollars, oranges, cattle, hides, phosphates, and a few miscellaneous articles, are sent almost exclusively to the United States. Those destined for Europe pass through the United States in transit. There has been a slight decrease in the exports.

Cattle.—The exportation of cattle was very small in the first three quarters of the year, and during the last quarter has ceased, owing to the increased duty now charged on cattle entering the United States. Heretofore, being classed and invoiced as "cattle for breeding purposes," they were admitted free.

Ores.—Of gold and silver and silver-lead ores, the tonnage exported and values are about the same. The increased value of lead has compensated for the duty now placed on that mineral on entering the United States in ores combined with other metal. No mineral ores from this section have been shipped to Europe as yet, but are sent, as formerly, by rail to the reduction works in the United States.

Wheat.—No wheat was exported during the year to Europe, as was done last year, owing to the crop being less abundant, the excess over home consumption being sent in the shape of flour to the Mexican coast south.

Oranges.—There has been an increase in the exportation over that of the past year.

Phosphates.—From the islands in the Gulf of California (off the coast of this consular district) phosphates are shipped, as formerly, direct to Europe. A small quantity was sent during the year to San Francisco.

The total exports during the year from this consular district to the United States amount, approximately, to \$1,342,758.99.

There have been no changes in the export laws during the past twelve months.

Table showing the exports from Guaymas for the year ended December 31, 1890.

Description.	Quantity.	Value, including costs and charges.
Bullion :		
Gold and silver.....bars...	76	\$410,061.70
Gold.....packs...	8	37,130.64
Fish fins and cones.....do.....	59	271.00
Gum mesquite.....sacks...	40	780.00
Garlic.....do.....	7	18.00
Hides :		
Cattle.....number...	2,966	8,148.75
Tiger.....packages...	1	45.00
Ores, silver.....sacks...	4,540	32,750.00
Peas, split.....do.....	1	4.50
Phosphates.....tons...	2,356	*35,000.00
Pearls.....packages...	1	2,500.00
Plumbago.....sacks...	771	1,115.00
Total.....		527,757.99
Ores, bullion, oranges, and cattle from Guaymas district, not specified.....		†350,000.00
Ores, gold and silver bullion, and coined silver dollars from Alamos, in Guaymas district, via Mazatlan.....		†500,000.00
Grand total.....		1,377,757.99

* Shipped to Germany direct; other European exports shipped indirectly through the United States.

† Approximately.

NAVIGATION.

The tonnage at this port for the year shows an increase of the Mexican, or national, tonnage, but there is a slight decrease in foreign tonnage. The United States tonnage is more than all other foreign tonnage combined. The total tonnage arriving and departing, according to the memoranda given me by the captain of the port, was 39,567 tons, which is by Mexican meas-

urement, giving an increase over that of the United States and England. There are no changes to note in the navigation laws. All foreign flags are placed on the same basis, without discrimination as to nationality.

There is one line of steamers from San Francisco to this port, touching, going and returning, at the intermediate ports of Ensenada, San José del Cabo, Mazatlan, and La Paz. The steamers of this line make monthly voyages, and have no subsidy. The inward cargo consists of assorted merchandise and machinery; outward cargo, hides and miscellaneous articles.

Sailing vessels are few, and their inward cargoes are principally lumber from California and Oregon; outward cargoes, gypsum from San Marcos Island, in the Gulf of California.

There are no steam-vessels from Europe. The sailing vessels bring assorted cargoes of merchandise, and their return cargoes are phosphates from the Gulf of California, dye-woods, and ores from points outside of this consular district. There are four steamers under the Mexican flag engaged in the trade on the coast. The largest, the *Alejandro* (600 tons), makes semi-monthly voyages to the coast ports of La Paz, Altata, Mazatlan, San Blas, and Manzanillo, carrying the mails under a subsidy of the Mexican Government. The sailing vessels are engaged exclusively in the coasting trade with the coast ports south, as there are no ports open to traffic north of Guaymas. As an inducement for Mexican vessels to engage in foreign trade, the Government allows a rebate of 2 per cent. of the duties on the merchandise brought from foreign countries under the Mexican flag; but no Mexican steamers or sailing vessels from this port are engaged in foreign trade. The lack of a commercial treaty between the United States and Mexico requires, under our laws, the payment of 10 per cent. duties on value of the cargo arriving in Mexican bottoms at our ports; besides, the payment of the regular duties on dutiable articles has operated against Mexican vessels making voyages to United States ports.

COASTING TRADE.

The trade between this port and those as far south as Manzanillo (north of Acapulco) is about the same as in the past year. The total values of the exports and imports will approximate \$1,300,000. The exports are principally flour, cotton in small quantities, and coal-oil, which comes in transit from the interior of Mexico (from the refinery of the Waters Pierce Oil Company). The imports are sugar, coarse cotton, sheetings, *serapes* (blankets), cocoa oil, common palm-leaf hats, and salt. The salt from Carmen Island, in the Gulf of California, 110 miles from Guaymas, has been brought during the past year in large quantities to this port (in comparison with former years), and is sent by rail to different points along the Sonora Railway for mining purposes (used in the beneficiation of ores) and to the central part of Mexico. The salt sent by rail to the interior of Mexico passes through Arizona and New Mexico in transit to El Paso, Tex., and thence by the Mexican Central Railroad to the interior of the Republic. The supply of

salt on said island is said to be almost inexhaustible. It is formed in a salt-water lake in the island by natural evaporation and is nearly pure, containing from 96 to 98 per cent. of sodium. A number of small vessels are engaged in delivering this article at different places on the coast and at Guaymas.

Table showing the navigation at Guaymas for the year ended December 31, 1890.

ENTERED.

Flag.	From—	Steamers.		Sailing vessels.		Total.	
		No.	Tons.	No.	Tons.	No.	Tons.
Mexican.....	Coast ports	99	18,518	177	4,884	276	23,402
American.....	United States and coast...	19	9,926	8	2,083	27	12,009
English.....	.....	.....	.....	1	856	1	856
German.....	Europe.....	.....	.....	3	2,932	3	2,932
Danish.....	do.....	.....	.....	1	368	1	368
Total.....	.....	118	28,444	190	11,123	308	39,567

CLEARED.

Flag.	To—	Steamers.		Sailing vessels.		Total.	
		No.	Tons.	No.	Tons.	No.	Tons.
Mexican.....	Coast ports	99	18,518	177	4,884	276	23,402
American.....	United States and coast...	19	9,926	8	2,083	27	12,009
English.....	.....	.....	.....	1	856	1	856
German.....	Europe.....	.....	.....	3	2,932	3	2,932
Danish.....	do.....	.....	.....	1	368	1	368
Total.....	.....	118	28,444	190	11,123	308	39,567

NOTE.—The above is by Mexican measurement furnished by the port authorities.

RAILWAYS.

The Sonora Railway is the only one in operation in this consular district. Daily trains with freight and passengers are run from Guaymas to Nogales, at which point it connects with the railway system of the United States. The earnings of the road, I am told, have increased during the past year.

The projected railway, called the Sonora, Sinaloa, and Chihuahua, from this port southeasterly to Topolobampo, in Sinaloa, thence across the Sierra Madre Mountains to Chihuahua, is still a project. A few miles of road-bed were graded in 1889; then work suspended, and has not been resumed. It is hoped that in the coming year construction will again be commenced and continued. The line of road passes over a country rich in agricultural and mineral products. A branch line of the before-mentioned road 100 miles in length is also projected from the main line near this port eastward to the coal-fields of Sonora. The construction is expected to begin during the year, which, if completed, will facilitate the transportation of mineral ores and other products from that part of the country, that to-day is carried on mules and by wagons.

The projected railway from Mazatlan coastwise northward to this consular district (mentioned in last year's report) remains in an apparent collapsed condition, as the line has not been surveyed.

MINING INTERESTS.

The quantity of mineral ores exported during the past year from this consular district is more or less the same as the preceding one. Those from the north and central part were sent to the reduction works in the United States; those from the south (Alamos) go generally to the port of Mazatlan (Sinaloa) and are there reshipped to Europe or the United States by vessels.

The concession granted by the state government to certain American citizens to erect smelting and reduction works has not been complied with, and Sonora to-day has no smelting and reduction works where gold and silver ores are purchased and reduced or where small mine owners can have their ores treated.

The only class of mines worked are those of silver and gold, but principally the former. Veins of copper, lead, iron, antimony, and deposits of cinnabar and coal are found in different parts of the district, but are not developed.

The coal deposits have been worked to a small extent to supply fuel for the steam works of the mining companies in the immediate neighborhood. This coal (anthracite) is said to be abundant and of good quality, containing from 80 to 90 per cent. of carbon. The veins, or seams, vary in thickness from 4 to 10 feet. These deposits can be reached from the coast over easy grades. The coal used by the Sonora Railroad is brought from Blossburg, N. Mex., at a cost approximating \$12 per ton (silver). Steam vessels obtain their supply principally from San Francisco and from Mazatlan.

The plumbago mines, near the Sonora Railway, are being worked by an American company and the ores in small quantities shipped to San Francisco.

The cinnabar deposits have not been developed; only a few surface excavations have been made on the deposits, which, I am told, did not produce ores in the quantities anticipated.

Concessions of mineral lands, or zones, under the federal law of 1887, have not given the results that were expected as to the development of certain parts of the country known to be rich in minerals (gold and silver). Many of the persons who obtained concessions from the Government expected to be able to form companies in the United States or Europe who would furnish the capital necessary to develop the mines (the minimum sum to be employed is fixed by the law at \$200,000); failing to do this, and not commencing work in the time specified in the concession, the same became null. Several of the mining concessions in this state, owing to this case, have become forfeited and invalid.

AGRICULTURE AND HORTICULTURE.

This branch of industry can be said to be almost entirely in the hands of the natives of the country. The staple products are wheat, corn, and beans, but little cotton or sugar-cane being grown.

The wheat crop has been an average one, but not as abundant as that of last year, when Sonora wheat was exported to Europe, yet sufficient for home consumption and to supply with flour the coast south.

Corn and beans gave fair returns, and at the time of harvesting corn sold at from 40 to 50 cents per bushel; beans, at \$2.50 per bushel.

The orange crop was in excess of that of last year, as young orchards are producing fruit. The business of cultivating oranges in Sonora for shipment to the United States dates back to 1883, after the completion of the Sonora Railway. It is estimated that 30,000 boxes were shipped, principally to Kansas City and Denver, each box containing an average of 150 oranges. They are generally sold on the trees to dealers, this year at from \$6 to \$7 per thousand (Mexican silver).

Grapes, lemons, olives, and figs are grown for home consumption only; but, if attention were paid to their culture, they would become one of the industries of the state, as the conditions of soil and climate of half of this consular district are favorable to their growth and cultivation.

POPULATION.

During the past year there has been no material increase in the population. The last census placed it at 150,000, approximately. The consular district of Nogales being formed out of the northern portion of the state, as mentioned, covering four political divisions, or counties, reduces the population of this consular district of Guaymas to about 100,000 people.

The resident foreign population does not exceed 1,400. American residents comprise about one-half, and are almost exclusively employed in mining pursuits. The Chinese population increased slightly during the year, and is estimated at 210, against 170 last year. In the second quarter there were landed at this port 252 Chinamen, with the object (as facts afterwards proved) of passing through in transit to the United States. The attempts made by these immigrants to cross the boundary line into Arizona were frustrated by the vigilance of the United States officials along the frontier, and arrests were made from time to time. In July these immigrants commenced to depart from this consular district by steamer from this port to Ensenada, Lower California, Mexico (south of San Diego), and to the Mexican coast south. From July to the present time 155 have departed; adding to these 57 arrested in Arizona after crossing the border, makes 212, deducted from the 252 arriving, as mentioned, leaves 40 to be added to the 170 here in the beginning of the year, leaving 210 as the number, approximately, left in Sonora, of which 165 are in the Guaymas consular district employed in the shoe factories, rough clothing (which they now control), laundries, and gardening. This class of immigrants in Sonora do not seek employment as house servants, as the

wages they ask are in excess of that of the native servants, and up to this time they are not employed as laborers in outdoor work or at the mines for the same reasons. As there is a scarcity of laborers throughout the country, should the construction of the projected railways be commenced and continued, Chinamen or some other class of laborers must be brought to the country to supply the demand. Chinese immigration is not looked upon favorably by the laboring classes of the coast.

PUBLIC INSTRUCTION.

The public schools of Sonora are under the direct supervision of the state government, and in all the towns and villages primary schools are established that are open to all, without distinction of class or color. The expense of maintaining them is paid by the state, an appropriation being made annually for that purpose. No school books favoring any religious sect are permitted to be used. Semi-annual reports of the schools are made to the government. In the principal cities the modern system of instruction has been introduced with good results. The furniture for said schools was purchased in the United States. A high school, or college, has been established at the capital of the state (Hermosillo), and a public library, which is maintained by the state government.

COLONIZATION.

The colonization of the lands of the fertile valley of the Yaqui River, mentioned in my last report, is not as yet an accomplished fact, as there still remain bands of Yaqui Indians in open rebellion. The Federal Government still maintains at different places in the valley twenty-five hundred troops in garrison and in campaign in the surrounding mountains against those still in arms. Surveys are now being made for a large irrigation ditch to convey the water of the river on the elevated lands of the valley.

The colony established some years ago at Topolobampo harbor, bordering on the south of this consular district (Mazatlan), by Col. Albert K. Owen can not be said to have realized the expectations of the founder. Those colonists who remained there have been able to maintain themselves and keep up the organization, but under difficulties and privations. During the last quarter of the year two hundred new colonists have gone there well supplied with agricultural implements, seeds, etc., and, also, with a few fine-graded cattle. These colonists are from the United States, and, as a rule, are persons of education. The colony is established on a communistic basis.

CONCLUSION.

During the past year the sanitary condition has been good. The peace and quiet enjoyed for years past continues without fear of civil disorder.

By a comparison of the imports, it will be seen that those from the United States are double in value those from Europe, and that all the exports go to the United States. Before the year 1875 the bulk of the imports came from Europe; since then the greater portion (two-thirds) is received from

the United States. In 1870 (from commercial data at this consulate) the imports and exports of this district amounted in value to about one-half of what it is in 1890. The effect of direct railway communication with the United States has, to a great extent, contributed to the material prosperity of this part of Mexico, as it gives rapid and regular transportation for the exports to a market and facilitates the importing of merchandise from the commercial centers of the United States, which formerly came around Cape Horn from Europe.

A. WILLARD,
Consul.

UNITED STATES CONSULATE,
Guaymas, December 31, 1890.

Cadiz-American steam communication.—The steamers of the Empresa Insulana de Navegação Company have not been able to call at this port as yet, owing to the strict quarantine regulations of the Portuguese Government. They are ready to commence, however, and are only waiting until the quarantine is suspended. The agents of the company are doing much to post the exporters of this district regarding American markets and customs regulations, and, I believe, the result will be increased exportations from this district.—ROBERT W. TURNER, *Consul, Cadiz, October 31, 1890.*

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES.

No. 125.—FEBRUARY, 1891.

ISSUED FROM THE BUREAU OF STATISTICS, DEPARTMENT OF STATE.
ALL REQUESTS FOR THESE REPORTS SHOULD BE AD-
DRESSED TO THE SECRETARY OF STATE.



WASHINGTON:
GOVERNMENT PRINTING OFFICE,
1891.

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

NO. 125.—FEBRUARY, 1891.

BRITISH AGRICULTURE.

REPORT BY COMMERCIAL AGENT REID, OF DUNFERMLINE.

The official report of the director of public statistics for the year 1890 has just been issued by the Government printer. As some of its statements may be useful, some care has been taken to collate such as seemed to claim the first attention or touched American interests. The reports of acreage and of live stock are based upon 577,841 returns from occupiers of land and from 4,217 owners of live stock not occupants of land.

CULTIVATION.

The statistics show that for Great Britain as a whole the cultivated surface, excluding all wood, mountain, and heath land, recorded as farmed by its owners was 4,843,000 acres, against 4,852,000 acres in the preceding year. Land in the hands of tenants was 27,925,000 acres, against 27,881,000 acres in the preceding year. The decrease of owner-farmed land is most marked in Scotland. In Wales ownership farming has increased. The reports are required from every separate holding of cultivated land of a quarter of an acre and upwards.

CROP AREA.

The area in Great Britain under crops, bare fallow, and grass was 32,768,000 acres, an increase of 35,000 acres compared with 1889. The cultivated surface reported for 1890 is 666,000 acres greater than that returned in 1880 and 2,361,000 acres greater than that in 1870. A scrutiny of the various reports seems to prove that the reclamation and fencing of land previously held as waste has been for some time in active and unintermitted progress. At the same time a large amount of land has been withdrawn for buildings, railways, and ship-canal.

SHRINKAGE OF LAND UNDER PLOW.

A material and nearly continuous shrinkage of land under the plow has been in progress during the last eighteen years. The grass area has increased in larger proportion.

Table showing arable and pasture lands.

Year.	Arable land.	Pasture.
	<i>Acres.</i>	<i>Acres.</i>
1870.....	18,335,000	12,073,000
1880.....	17,675,000	14,427,000
1890.....	16,751,000	16,017,000

Compared with 1889, the arable land of Great Britain in 1890 is less by 117,000 acres and the pasture greater by 152,000 acres, nearly the whole change being in England. The ratio of increase of clover and grass crops was 24½ per cent. in 1870, 25 per cent. in 1880, and 28½ per cent. in 1890.

CEREAL CROPS.

The 8,033,000 acres now returned under corn crops compare with 8,075,000 acres in 1889. This total is 1,000,000 acres below the average of the five years ending with 1880. This decline is chiefly in wheat, and in England only. The decline is attributable to the fall in the price of wheat—nearly 50 per cent. since 1870—'75.

Barley.—The area under barley in 1890 was 2,111,000 acres, a decrease of 10,000 acres from 1889. The decline was in Scotland and Wales.

Oats.—Oats covered 14,000 acres more than in 1889, or a total of 2,963,000 acres. The increase has been in England only. In Scotland and Wales a decrease is shown.

Potatoes.—The acreage of potatoes was 530,000, a falling off of 50,000 acres. The collectors agree in ascribing the general decrease to unremunerative prices in 1889, when the crops were large.

Hops.—The hop acreage continues to lessen, showing for 1890 an acreage of 54,555 as compared with 57,749 in 1889 and 58,494 in 1888.

FRUITS.

The growth of fruits is on the increase. The acreage reported is 46,200, an increase of 4,300 acres. Jam and preserving factories are multiplying. Orchards show an acreage of 202,300, the largest yet recorded. Market gardens have increased to 73,300 acres.

HORSES.

The live stock report shows 981,000 horses kept for agriculture and 394,000 unbroken horses. Horse breeding has been found profitable and is on the increase; 57,430 breeding mares are reported.

STOCK BREEDING.

An increased demand for milk and the profits of stock breeding have caused a large increase in the stock of sheep and cattle. The number of cows and heifers in milk or in calf now returned is 2,538,000—100,000 greater than in 1889. An increase compared with 1880 of 400,000 cattle under two years and a total of 2,532,000 are regarded as remarkable.

SHEEP AND PIGS.

The number of sheep of one year old and upwards is returned at 16,757,000, or 894,000 more than in 1889. In lambs the increase is greater still. These are stated as 10,516,000, the increase over the preceding year being 746,000. The total sheep stock of Great Britain (27,272,000) is now greater than in any year since 1879, a recovery of nearly 3,000,000 head being apparent since the losses of 1879 and 1882.

The cheapness of potatoes has led to a large increase of pigs, now numbered at 2,774,000, the largest ever before reached.

Table showing total live stock in Great Britain for the years 1870, 1880, and 1890.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1870.....	1,267,000	5,403,000	28,398,000	2,171,000
1880.....	1,421,000	5,912,000	26,619,000	2,001,000
1890.....	1,433,000	6,509,000	27,272,000	2,774,000

RECAPITULATION.

The following table is a grouping of the whole report:

Description.	1890.	1889.	Increase.	Decrease.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Cultivated area.....	48,045,755	47,931,165	114,590	.....
Permanent pasture.....	27,115,425	26,816,092	299,333	.....
Arable land.....	20,930,330	21,115,073	.....	184,743
Corn crop.....	9,574,249	9,637,354	.....	63,105
Green crop.....	4,534,145	4,541,760	.....	7,615
Clover.....	6,097,210	6,188,502	.....	91,292
Flax.....	99,326	116,192	.....	16,866
Hops.....	54,555	57,749	.....	3,194
Small fruit.....	46,733	42,506	4,227	.....
Bare fallow.....	524,112	531,010	.....	6,898
<i>Live stock.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	
Horses.....	1,964,911	1,945,386	19,525	.....
Cattle.....	10,789,858	10,272,765	517,093	.....
Sheep.....	31,667,195	29,484,774	2,182,421	.....
Pigs.....	4,362,040	3,905,855	456,175	.....

IMPORTS.

Wheat.—The mean wheat import of 1886-'89 has been 165 pounds per head, 39 pounds less than in 1882; but flour has risen from 21 pounds

per head in 1861-'65 to 48 pounds per head in 1889. Of a total import of 58,551,887 cwts., 17,009,036 cwts. were received from the United States.

Dead meat.—The most striking of all imports is dead meat. The import of bacon and hams was six times greater in 1876-'80 than in 1866-'70, but has not increased since. The trade in imported fresh beef, mutton, and pork, which, even up to the end of 1875, did not furnish more than a single pound per annum to each family of five persons, has furnished 29½ pounds for each such family in the period 1886-'89 and in the single year 1889 reached 40 pounds a year to every such family in Great Britain. Of imports amounting to 8,469,653 cwts. of dead meat from all countries, the United States supplied 5,575,591 cwts.

Butter, margarine, and cheese.—The supply of butter and margarine has doubled in twenty years. Receipts of butter in 1889 were 1,927,842 cwts.; margarine, 1,241,690 cwts.; of which 110,292 cwts. of butter and 833 cwts. of margarine were supplied by the United States. Of 1,907,999 cwts. of cheese imported, 825,670 cwts. came from the United States. This trade has not increased.

Cattle and horses.—The year 1889 has seen the largest import of live cattle ever before recorded; 555,222 head have been received, of which 294,424 came from the United States and 84,588 from Canada. Of 677,958 sheep imported, 18,690 came from the United States. Imports of horses number 13,832, of which 236 came from the United States. These include stallions, mares, and geldings. The average value of these has increased from an average of £20 to £69.

JAMES D. REID,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Dunfermline, January 2, 1891.

VEGETABLE FIBERS OF TRINIDAD.

REPORT BY CONSUL PIERCE.

I beg to send herewith specimens of fibers from twenty-six different kinds of vegetable substances of this island, with the request that the same be presented to the Department of Agriculture with the compliments of Mr. Thomas St. Hill, of Port of Spain.

Mr. St. Hill, who for many years has given special attention to the study of the fiber-growing products of Trinidad, has favored me with the following description of these several fibers:

Maholtine (*Abutilon peroplocifolium*) grows wild in large quantities. It is easily cultivated by simply cutting down bushes and burning them and scattering the seeds of the plant. In seven months the plant will be ready to cut down for its fiber. One acre of good ground will produce about 5,000 pounds of stalk, and this stalk, reduced to fiber, will make about 800 pounds. The stalk grows from 8 to 12 feet, the skin, or bark, of which is stripped off and steeped in cold water eight or ten days, after which the green, watery substance is washed out, leaving a fiber 8 to 10 feet long.

White mahoe (*Sterculia caribaea*), like the maholtine, grows wild and may be cultivated in the same way, producing the same quantity of fiber by the same curative process. The fiber is whiter and more silk-like than that of the maholtine and is believed to be superior to it, though it has never been sent abroad to test its merit. A crop is reaped every seven months.

Cousin mahoe (a species of the *Sterculia caribaea*) grows wild over the island in great abundance and on the poorest soil; is very hardy, and, left alone, will not be stunted by the grass. The plant is only 4 to 5 feet high, and the fiber not so silky as that of the white mahoe. An acre thickly covered with it will yield about 6,000 pounds of stalk, making, say, about 600 pounds of fiber. It is a stalk fiber, and cured in the same way as the white mahoe. A crop is reaped every seven months.

Gumbo, or okra (*Abelmoschus esculentus*), is another stalk fiber, the plant growing 6 to 8 feet high and producing a fiber about the same length. It is more delicate than the foregoing, requiring to be weeded, but is cured in the same way. Cultivated on good soil, it will produce 4,000 pounds of stalks, yielding as much fiber to the pound as the maholtine or the white mahoe. The fiber of the gumbo, unlike those above mentioned, will not contain water, but throws it off like oil silk. A crop is harvested every seven months.

Gemove (*Malachra*), another stalk-fiber plant, grows wild in damp land. Like the gumbo fiber, it does not absorb water. It grows 4 to 5 feet high, and produces about the same as the cousin mahoe—6,000 pounds of stalk and 600 pounds of fiber to the acre. It is cured by hand, as those above. A crop is harvested every seven months.

The plantain (*Musa sapientum*) will produce from 5 to 6 pounds of fiber to each stalk. The stalks grow 8 to 9 feet high, and eight hundred of them may be produced on an acre of ground. The fiber is obtained by putting on two wooden rollers and rolling and squeezing the stalks to crush the watery pores, then steeping it in water eight or ten days, then putting it under the same rolling pressure with heavier weights. The fiber is then wrenched and put out to dry. It will dry in an hour or two, and is good for coarse bagging.

The banana (*Musa paradisiaca*) grows 4 to 5 feet high, produces 2 or 3 pounds of fiber to the stalk and eight hundred stalks to the acre. It is the same as the plantain, except that it is less in size and quantity, and is prepared in the same way. The crop is annual.

Ramie, or China grass (*Bahmeria nivea*), grows very thick, and, once planted, sustains itself against other grass. After the first year it can be cut every six months. The stalk grows about 4 feet high and the size of one's small finger. It will produce an ounce of fiber to every square foot. The plant is from China, imported here for experimental purposes about three years ago, and has not yet assumed any commercial importance.

Mahoe bord-la-mer (*Paritium tiliaceus*) does not grow inland, but on the sea-shore. It belongs to the *Hibiscus* family. It is a stalk fiber, but, unlike the foregoing, it branches, and the branches also produce fiber. It grows 8 to 15 feet high, and the curative process by hand is the same (excepting the plantain and banana) as that of the others mentioned. But the natives use it for rope. Each tree will produce about half a pound of fiber, and 1 acre can support eight hundred trees. It branches close to the bottom of the tree, and the fiber is usually 4 to 6 feet long. The crop is annual.

Red mahoe (*Sterculia caribaea*) grows wild on any soil of the island, produces about eight hundred trees to the acre, grows 8 or 10 feet and then branches. The stalk and branches are both used for fiber. The product is about 2 pounds of fiber to the tree. The fiber is obtained by the same process as that of the mahoe bord-la-mer. It is used by the natives for making rope, being even better for that purpose than the mahoe bord-la-mer, the fiber being from 8 to 10 feet long. The crop is annual.

Rucou, or annotto, an Indian plant from South America, used there for making hammocks, is a very strong fiber. One acre will support eight hundred stalks cultivated on fertile soil, and each stalk will produce about half a pound of fiber. The trees, or stalks, are 8 to 10 feet high and branch from near the bottom, both stalks and branches being good for fiber. The crop is annual.

Black sage (*Cordia cylendros*) is a small shrub about 6 feet high, outer bark black, and produces a very strong fiber used by the natives for making rope. The plant branches from the bottom, and both the stalk and branches produce fiber. An acre of ground will support sixteen hundred plants, and they will give one-fourth of a pound of fiber to each plant. The crop is annual.

Bois sang, or blood-wood, grows 25 feet high and branches out 8 or 10 feet from the bottom. When tapped, the tree emits a fluid resembling blood, which produces a red stain. Both stem and branches produce fiber. About six hundred trees may be produced on 1 acre, and each tree will produce 2 or 3 pounds of fiber, which is used here for making rope. The fiber varies from 4 to 6 feet in length, is quite tough, and would doubtless make a superior twine for bagging. It is cut and planted every three years.

Bois ceip (*Oreodaphne cernua*) grows 25 or 30 feet high, has a thick bark, the fiber being between the outer bark and the wood of the tree. The fiber is very strong, stands water well, and would be good for twine making. An acre of ground will produce four hundred trees, and each tree will produce 2 or 3 pounds of fiber, the length of which is usually 4 to 6 feet. A crop is harvested every three years.

Balazier (*Hilicomia*) is a wild plant, grows on cool soil, and its presence indicates superior land. The process of curing or obtaining the fiber is the same as that of the plantain or banana. The blades, which resemble the blades of the plantain, produce the fiber; but the blades grow from the roots of the bush like a pine-apple, and they are 6 to 10 feet long. One acre will produce about ten thousand blades, and each blade will produce half an ounce of fiber. It is a coarse fiber, not so strong as the other fibers mentioned, but would be good for door mats and similar purposes. It is reaped annually after three years.

Cacao (*Theobroma*) is cultivated for its valuable fruit; but the tree, which grows 15 or 20 feet high, is trimmed annually in the spring of the year, and the branches of each tree thus trimmed off will produce half a pound of fiber, which varies from 3 to 5 feet in length. It is strong and used as rope for making hammocks. It is cured, as stated, like the mahoe.

Gumbo misse, or African okra (*Abelmoschus moschatus*), is cultivated and cured the same as the *Abelmoschus esculentus*, but the stalk is darker and the fiber darker and coarser. The fiber, too, is not so long—only 3 to 4 feet—but as much stalk and fiber can be produced to the acre as of the *esculentus*. It does not absorb water, and it is good for rope and twine. A crop is reaped every seven months.

Bois l'ome (*Guazuma ulmifolia*) is a straight tree. At a distance of 8 or 10 feet up the body of the tree five or six branches will shoot out in a circle round it, and from this point to the top of the tree encircling branches shoot out at the distance of about 1 foot apart. The lowest branches are the longest, and they shorten as they ascend the tree, causing the tree to assume the shape of a sugar-loaf. Both the body and branches produce fiber. It is a straight, brown, strong fiber used generally for rope and twine making. Eight hundred trees may be produced to the acre, and after the third year will produce annually 1 or 2 pounds of fiber to the tree.

The *Agave Mexicana* grows 3 or 4 feet high, and 1 acre will support twenty-five hundred plants. After three years each blade will produce half an ounce, or, say, half a pound to the plant. The crop may be reaped each succeeding year for from twelve to sixteen years without replanting. The plant becomes dry and worthless as soon as it produces a flower, but it rarely produces the flower before twelve years, and usually not before sixteen or twenty years. This plant grows wild on the island, but it is understood to have been brought here from Mexico. The stem is thicker than the *Agave Americana*. The fiber is 3 to 4 feet long, fine, strong, and would doubtless be good for textile purposes. The process of curing it is the same as that of the plantain, already stated.

The *Agave Americana*, or American aloe, grows higher than the *Agave Mexicana*. It varies in height from 4 to 5 feet and the fiber is the same length. It grows here abundantly, mostly near the sea-shore, and is understood to be native to the island. The fiber is coarser than the Mexican agave, but about as much can be produced to the acre, and it is cured in the same manner. After the third year it may be reaped annually.

Of the pine-apple (*Ananassa sativa*), only the blade, which is 2 or 2½ feet long, produces fiber, which is of the same length. It is cured in the same way as the plantain and agave. The fiber is strong and fine, and is believed to be well suited for textile manufactures. It is of a finer texture than either the American or Mexican agave. One acre can produce annually twenty-four hundred plants and each plant 2 ounces of fiber. After the second year a crop is reaped annually.

Pinquine, or wild pine-apple (*Bromelia sylvestris*), is like the cultivated pine-apple. It grows here wild and in abundance, mostly on poor land. The blades are 5 to 6 feet long and the fiber the same length. One acre of land will produce one-fourth more fiber of it than of the pine-apple; and it is equally as fine and strong and even, if any thing, more beautiful, and is believed to be as serviceable in every respect as the fiber of the pine-apple. It is cured in the same way as the pine-apple and plantain. After the second year a crop is reaped annually.

Sansevieria seylanica is native here and grows in great abundance. It is from 2 to 5 feet high and fiber of the same length. The blades only produce fiber, and they grow from the root in bunches. The fiber is strong and well suited for fine-textiles. It is about as fine, but stiffer than the fiber of the American agave. A square foot will give about 3 ounces of fiber, and after the first year may be reaped annually.

Agave rigida, or sisal-hemp, has lately been introduced here. The blades alone, which grow about 2½ or 3 feet long, are used for fiber. Eight blades, on actual experiment, give 1½ ounces of fiber; but the blades used were believed to be not fully matured. The fiber obtained is about 3 feet long, strong and coarse and stiff, suitable, it is believed, for strong ropes and chair bottoms. An acre ought to support two thousand plants (say sixteen blades each) and ought to produce at each reaping 3 ounces of fiber to the plant. After three years a crop is reaped annually.

Wild pine (*Karatas*) grows here in great abundance. It is a parasite found on trees of all descriptions, and resembles a pine-apple. The length of the blade is from 2 to 3 feet, and the fiber is the same length, and is similar to that of the pine-apple. The fiber is as fine, but not as strong, as that of the pine-apple. After two years a crop is reaped annually.

Spanish needle (*Yucca*) grows 8 or 10 feet high, and is used for hedge fences. It has blades 2 to 3 feet long, fiber of the same length, and similar to the blades of the sisal-hemp. It bears a white flower every two or three years. The fiber is believed to be as good in every respect as that of the *Sansevieria*, which it resembles very much. It is a strong, fine fiber, and doubtless of much importance for textile purposes. Each plant ought to produce sixteen to twenty blades after the first year, giving about 3 ounces of fiber to the plant. After the second year it can be reaped twice a year and produce as much fiber to the acre as the sisal-hemp.

In addition to the foregoing information, obtained from Mr. Thomas St. Hill, to whom I would refer interested parties for further information, I beg attention to the following extract from the annual report (1889) of Mr. I. H. Hart, F. L. S., superintendent of the royal botanical gardens of Trinidad:

The typical form of the species to which the remarkable fiber plant belongs (*Agave rigida*) is being grown and propagated in the gardens; but, though it is known to produce a first-class fiber, it is probable that its variety *Sisalana* gives a larger return of a better class of fiber, and is more easily and economically worked.

With regard to machinery for producing the fiber from all plants of the order of *Amaryllidacea*, it is probable that no machine at present is superior to that manufactured by a London house, although it is stated in a recent report that many of the fiber machines used in Yucatan of an original type, called the "Raspadore," are doing the work extremely well, and a similar machine is being used in Mauritius. Kennedy's Jamaica Machine is also said to do good work.

In my report on the "Agri-Horticultural Resources of Tobago" I mentioned *Furcraea cubensis* as the source of a first-class fiber. This plant is probably not equal to the "pita," or *Agave sisalana*, as a fiber producer, but still it is a first-class fiber, and one which would undoubtedly pay to manufacture where it can be cultivated on an economical and extensive scale. In Tobago the plant is indigenous, being found covering thousands of acres in all parts of the island to the exclusion of others of its order. *Furcraea cubensis* is known in Trinidad as the "Langue Boenf," in common with an agave growing at the Bocas Islands. The latter has been determined by Mr. Baker, of Kew, in his new work on the *Amoryllidaceae* as *Litsea polycantha*, formerly known only from Mexico. It is useless as a fiber producer, its fiber being curled and hard to extract. *Furcraea cubensis* is, however, growing in many places in Trinidad, being found at the Bocas Islands, the Maracas valley (where the fine variety *inermis* is found), and is cultivated at Brechin Castle estate and at the convict depot of Chaguanas. Consequent upon the anticipated demand for plants, many thousands have been raised in the botanical gardens, the beds now containing a stock of between fifteen and twenty thousand plants. *Sansevieria* of several varieties are also being propagated largely, and two species recently imported from Kew have been added to the number. The fiber from these plants is a most excellent one, and commands high prices in the market. It is hoped, by the aid of suitable machinery, to place a consignment of this fiber upon the market during the coming year from the fields under cultivation at the convict depot of Chaguanas.

A gentleman whose opinion, I think, is entitled to considerable weight informs me that there is no machine now in use in this colony (Trinidad and Tobago) that obtains the fiber without destroying the fuzzy substance of the fiber ribs. The principal machine, if not the only one, now operated in this colony is arranged for the operator to hold the blade of the plant in his hand, while the machine scrapes out the green and watery substance. He thinks if a machine could be devised, if not now in existence, that would act somewhat on the principle of a cane-mill, in which the cane enters one side and comes out the other thoroughly crushed and squeezed, a great advantage would be obtained over the present practice here.

WM. P. PIERCE,
Consul.

UNITED STATES CONSULATE,
Trinidad, November 29, 1890.

FIBER PLANTS OF COAHUILA.

REPORT OF CONSUL FECHET, OF PIEDRAS NEGRAS.

The rugged hills, elevated *mesas* (table-lands), and upland valleys of the state of Coahuila, Mexico, are covered with a scant soil composed almost entirely of mineral matter resulting from the decomposition of the underlying rock formations. Stones and rock fragments abound in the scanty soil.

In these semi-mountainous regions there are no living springs or running streams of water. Heavy torrential rains are followed by long periods without rains, so that these regions are almost as dry, and quite as sterile in life-supporting vegetation, as desert regions.

Here, however, in these otherwise worthless regions the valuable fiber plants—the lechaquilla and the palma real—flourish. These plants find in

these barren and stony districts a congenial habitat and thrive so well that it is claimed that in no other region do they attain equally large growths. The lechaquilla produces the ixtle of commerce, and the palma real (a species of Spanish dagger) yields a long, tough, and pliable fiber that is especially adapted to the manufacture of twine, rope, and all kinds of cordage and coarse baggings.

The supply of these valuable fiber plants is practically inexhaustible throughout the elevated districts of Coahuila. Above the lower valleys are vast tracts, through which a man on horseback can thread his way by narrow paths all day through thickets of lechaquilla and palma real without seeing a square rod of soil that is free from those drought-proof, fiber-producing plants.

The Mexican International Railway traverses the state of Coahuila from Piedras Negras, on the Rio Grande, to Torreon, on the Durango frontier, thus furnishing ample transportation facilities. Already on the line of this railroad one American company has engaged in the manufacture of ixtle fiber from the lechaquilla and two other companies are erecting machinery for the same purpose.

At present in Coahuila the bulk of the ixtle is produced by hand processes in a slow, crude way by beating the plant to separate the fiber from the enveloping pulp. A decorticating machine to economically and thoroughly clean the fiber from the pulp without injury to the fiber is a desideratum that has only been attained by patient experiment. The machine-made product will soon exceed and replace the hand-made product, with a resulting decrease of cost of production.

Under the tariff laws of the United States all kinds of vegetable or plant fibers are admitted to the United States free of duty.

Ixtle from Coahuila is already exported in large amounts, 430,860 pounds having been shipped to the United States and 40,588 pounds shipped in bond to Europe from this port during the fiscal year ended June 30, 1890, at an export valuation of 5 cents per pound. At the present prices ixtle is too costly to be spun into cordage in the United States, as it is in Mexico, and the fiber is too short, too stiff, and tapers too much for use in the cordage machines now employed in the United States. Ixtle, however, finds a ready market at the various factories of brush-makers' material in the United States.

In these factories it is graded or sorted, colored gray, black, or white to imitate the different kinds of bristles, cut into lengths, and packed in little bundles for shipment to the brush factories.

In this form it is found to be the best substitute for bristles ever discovered, and for dry uses it makes a brush but little inferior to the genuine bristles, and, in fact, ~~cost~~ considered, is a superior article.

Ixtle is treated to a stiffening and water-proofing process, and polished so that it closely resembles the bristles, and is used in the best grades of brushes.

Palma real fiber has commoner uses and is better known; it is simply sorted, spun into cordage, or woven into bagging, for both of which purposes its great strength, pliability, and length admirably fit it.

The machinery and plant needed to prepare the fiber of these valuable plants are both simple and inexpensive and can be moved from place to place.

From present indications, it seems very certain that within a year very many factories will be established to produce the fiber from the lechaquilla and palma real at convenient points on the line of the Mexican International Railway, thus very largely increasing the product of raw fiber for exportation.

With abundant raw material (crude fiber) and ample railway transportation, it is believed that cordage and bagging factories and factories for manufacture of brush-makers' stock can be most advantageously established at the American towns along the Rio Grande border having railroad connections with Mexico.

Eagle Pass, Tex., opposite Piedras Negras, may be regarded as the center of the best fiber-producing regions, as large supplies of the raw material can be drawn from the regions to the south, southeast, north, and northwest.

Abundant raw material free of duty, ample railroad facilities from the interior of Coahuila and to all parts of the United States, and cheap and excellent fuel from the local coal mines around Eagle Pass would seem to embrace all the factors requisite for a successful enterprise.

EUGENE O. FECHET,

Consul.

UNITED STATES CONSULATE,

Piedras Negras, December 18, 1890.

AD VALOREM DUTIES IN GERMANY.

REPORT BY CONSUL-GENERAL EDWARDS, OF BERLIN.

I have the honor to report as of possible interest the fact that the ad valorem duties provided for in the union customs tariff of Germany are reckoned on the value at the place of origin or manufacture of the imported articles, in addition to the necessary transport, insurance, and commission charges to the port of first arrival in Germany. Whoever imports such an article must declare to its value in writing. If the customs officials consider the declared value insufficient, they are empowered to hold the goods for payment of the declared value, with an addition of 5 per cent. to the person importing the same. This payment must be made within fourteen days from the day of declaration, and any duties which may have been paid must be returned.

If the customs officials wish to exercise the pre-emption (confiscation) right, then the person against whom the same is to be exercised, if he so desire, may demand an appraisal of the wares by experts. The customs officers have the same right, if they do not decide to make immediate use of the right of pre-emption. If the appraisal by experts shows that the value of the wares does not exceed the declared value by more than 5 per cent., the

duty is to be collected in accordance with the declaration. If the real value is shown to exceed by more than 5 per cent. the declared value, the customs officers, as they see fit, may exercise their pre-emption right or collect duty on the value fixed by the experts. As a fine, 50 per cent. of itself shall be added to the duty when the valuation fixed by the experts exceeds by 10 per cent. the declared value. If the difference between the appraised value and the declared value exceeds 5 per cent. (the appraised value more than 5 per cent. higher), the costs of appraisal are to be borne by the declarant; if the opposite is the case, by the customs officials. In case of such appraisal, one expert judge is named by the declarant and one by the chief local customs official. Where a decision can not be obtained, or where the declarant demands it, the experts may select an umpire; and, when the experts can not agree in this, this may be done by the president of the commercial court or, where such does not exist, by the presiding officer of the civil court of first instance. A decision must be given within fourteen days after the appointment of the arbiters.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, December 4, 1890.

VERA CRUZ CUSTOM-HOUSE.

REPORT BY CONSUL-GENERAL SUTTON, OF NUEVO LAREDO.

The custom-house at Vera Cruz is the most important in Mexico, and a study of its financial operations for the year will be of interest in the discussion of Mexican affairs.

For the fiscal year ending June 30, 1890, the receipts and expenditures were as follows:

RECEIPTS.

Balance on hand July 1, 1889.....	\$71,730.64
Import duties.....	12,761,883.95
Balance of credits, imposts, etc., from previous years.....	639,992.28
2 per cent. additional for port works.....	267,258.83
Tonnage dues.....	13,713.04
Light-house dues.....	16,700.00
Fines.....	1,235.94
Loans on short time.....	1,194,409.82
Confiscations and fines.....	127,217.51
2 per cent. for hospitals.....	2,624.35
Deposits.....	15,524.69
Other custom-houses.....	121.49
General treasury.....	8,596.72
Duties on exports of woods.....	2,954.38
Smelting, assay, coinage, etc., dues.....	598.68
Total.....	15,124,562.32

EXPENDITURES.

Expenses of administration :

Salaries of custom-house officers.....	\$87,919.18
Salaries of customs guards.....	71,240.08
Salaries of boats' crews.....	5,336.30
Section of Alvaredo.....	6,732.65
Section of Tlacotalpan.....	5,950.72
Section of Santecomapam.....	2,239.17
Section of Nautla.....	4,189.73
Maritime and frontier custom-houses.....	9,568.00

193,175.83

Payments:

General treasury.....	7,870,126.22
Light-house.....	7,399.77
Railroad construction certificates.....	1,922,590.00
Liquidation of floating debt.....	653,360.00
Import duties.....	9,028.14
Credits on uncollected duties in previous years.....	6,269.75
Short-time loans.....	1,148,910.12
Confiscations and fines.....	119,325.20
2 per cent. for hospitals.....	2,427.43
Deposits.....	45,656.48
General, common, and extraordinary expenses.....	6,684.98
Municipality of the port.....	167,130.11
20 per cent. certificates, decree of April 2, 1888.....	2,663,350.00
2 per cent. extra for port improvements.....	246,754.82
Subvention to steamers for department of interior.....	3,300.00
Balance on hand July 1, 1890.....	59,073.47

14,931,386.49

Total..... 15,124,562.32

Table showing revenues of 1890 compared with 1889.

Description.	Fiscal year ending June 30—	
	1889.	1890.
Import duties.....	\$11,391,982.17	\$12,761,883.95
2 per cent. extra on duties.....	83,676.93	267,258.83
Overdue balances.....	312,532.51	639,992.28
Tonnage dues.....	16,575.67	13,713.04
Storage.....	2.10	
Light-house.....	12,250.00	16,700.00
Exportation of woods.....	2,753.95	2,954.38
Assay and coinage.....	307.99	398.68
Total.....	11,820,081.32	13,703,201.16

WARNER P. SUTTON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Nuevo Laredo, July 18, 1890.

COMMERCE AND INDUSTRIES OF MOROCCO.

REPORT BY CONSUL-GENERAL MATHEWS, OF TANGIER.

AMERICAN VS. EUROPEAN TRADE.

On the whole there has been a general increase of trade and an improvement in prices during the year 1889-'90, brought about by good harvests on the one hand and on the other by the opening of more direct trade with some European markets, the manufactures of which have hitherto been mostly introduced into Morocco through English and French channels.

Germany, Belgium, and Holland have of late come into active competition with England and France. Such articles as sugar, cotton and wool stuffs, iron and hardware, though of inferior quality to those furnished by the old markets, are nevertheless preferred by the natives on account of their cheapness; while, therefore, trade in general has increased with Germany, that of the French has shown some decrease.

In American manufactures no increase has been perceptible, as these invariably come into the country through European channels and are entered in the custom-house under the heading of goods coming from England and colonies, France, etc. I have in time back advocated direct communication between the United States and this country, in order to enhance the importance of our trade in this virgin land. The argument that so long as our manufactures are introduced it does not matter which way is employed can not hold good, inasmuch as American goods, coming through other hands, are hampered with commissions and profits which render it impossible for competition at the prices current in these markets.

It is notorious that our manufactures have competed advantageously in qualities and values with most countries in their own markets, while these same goods come into Morocco at prices which prevent their free introduction, notwithstanding their acknowledged superiority. I have seen articles overcharged 20 to 40 per cent. over catalogue rates, which enormous difference can not be brought about by simple freights and charges, but by the intermediate commission agents, who have in view the double object of making a large profit as well as of getting the preference for their national products.

There is no doubt that, were our merchants to introduce their productions and seek direct relationship with this country, our commerce would be materially benefited by the increase, to say nothing of the advantage of opening a direct trade with a country which is the stepping-stone to many points of central Africa. If this is done, there would be no difficulty in inducing the Anchor line and the Florio-Rubantino lines of steamers, which call at Gibraltar on their way from the United States, to call at Tangier, the distance being only a matter of two hours and the port expenses fully covered by \$10 to \$12 per steamer.

The German Government has in time seen this and acted accordingly, to the benefit of German commerce. German firms are established at Tangier and other Morocco ports, having depots of all classes of German articles, which they bring out for their numerous native clients, all of whom are indirectly under the protection of these firms and supported by the German legation; thus, in the course of eight or nine years, this trade has increased ten-fold and is steadily increasing. Germany sent her first representative to Morocco after the Franco-Prussian war, and since then three expensive embassies have gone to visit the Sultan, carrying presents consisting of German manufacture and arts. The last embassy, under Count Tattenbach, German minister, concluded a treaty of commerce with the Sultan, which is now in course of being ratified. All these efforts are pushed forward with the end of further daily increasing the trade between the two empires. Steamers going to Spain from Hamburg and Antwerp regularly call here. Germany is represented by the steamers of the Sloman's line and the Woermann line, which latter commenced to call here at the end of last year; these vessels land their goods, taking back what produce there is for their country.

Italian shipping now appears for the first time regularly. It consists exclusively of the steamers of the Veloce Company, of Genoa, which has made Tangier a port of call on the way to and from South America. At present they do not bring or take back much Tangier cargo, but they bring for transshipment for Cadiz quite an amount of cargo. From Tangier they take chiefly goat-skins and wax for Italy. They also take in provisions, which they can probably obtain cheaper here than in Italy.

Numerous travelers with samples are constantly pouring in, taking orders and studying the country; none go back empty-handed, and, judging by the progressive increase of the trade, they have no reason to complain of their new markets. Something ought to be done by our manufacturers and merchants in the shape of jointly creating an American depot of samples, in the hands of an American agency, which should recommend to our manufacturers the class, qualities, and dimensions of goods suitable for these markets, report upon the native products suitable for the United States, and use every means whereby a free interchange of commodities may be brought about. Such agency could procure orders, and, when quantities are of sufficient importance to justify it, order a steamer to call here with the cargo. By these means the natives will soon discover the advantage of giving preference to our goods, and eventually direct relations will ensue.

In the present time of known competition, when the battle for subsistence compels all European nations to direct their attention to unopened territories, we must not be behindhand in this land of promise.

TRADE HINDRANCES.

The great drawback to unprotected trade in this country in general has been the want of confidence experienced by most foreign traders, who are loath to speculate in any branch of trade on credit, finding it most difficult

to get their own back from the natives, who are so ground down by exorbitant taxation as to find all their products have disappeared before they have the value of them in hand." The poor agriculturist is on the one side dunned by his Government for taxes and on the other by his foreign creditor, who, also, has to suffer from the results of the Government's exacting propensities. In many cases, where the native is willing to acquit himself honorably towards his foreign creditors, he dreads to show his resource for fear of having his property confiscated by the unsalaried authorities, in whose eyes the greatest crime a man can commit is to possess property of any consideration. Under these circumstances, and in the absence of any proper tribunal wherein redress is likely to be obtained, foreign traders are chary about placing their wonted confidence in natives whose solvency may, from one day to another, become *nil* by a stroke from the functionary who has jurisdiction over them. Hence the eagerness of natives of obtaining, by any means, protection from any foreign representative, notwithstanding that the treaties afford sufficient protection for those legitimately connected in business with foreign traders. It is therefore not surprising that many of the tribes are in open revolt, and many who were formerly honest and thrifty plowers of land have been converted into bands of marauders, whom all the Sultan's efforts can not subjugate.

During the year divisions of the Sultan's armies are sent to different parts of the Empire, carrying devastation wherever they go; but, instead of subjugating the tribes, such steps only serve to irritate them all the more, as, instead of inquiring into grievances and endeavoring to redress wrongs by introducing salutary reforms, the policy seems to be that of weakening the already overwhelmed tribes, who, in their turn, resume their lawless practices as soon as the armies leave their district; and, in many cases, where the faults of the guilty are visited upon the innocent, these also become infuriated and join the rebellious movement when they see their property unlawfully confiscated or destroyed.

The Sultan has just returned to his southern capital, the city of Morocco, after a series of sanguinary encounters with the Berber tribes. Numbers of heads from the slain rebels have been sent to Fez and Mequinez to adorn their respective city gates to act as a deterrent to his subjects.

Under such conditions it is not to be expected that trade and industry can flourish, especially when its autocratic system gives the population no chance of turning to account the rich treasures of the country, many of the richest articles being prohibited to trade, while the less valuable produce is so hampered with taxation that the producer must give his produce at a very low rate in order to allow shippers to realize cost and profit.

The Sultan prohibits the development of the numerous mines of various precious and valuable metals, as well as coal, with which this country abounds. Attempts are being made to induce this Government to adopt a more equitable system and to encourage trade, so as to enrich its treasury by more legitimate contributions likely to result from the extension of commerce.

But little hopes, as yet, are entertained of a successful issue for these wise suggestions.

Owing to the foregoing reasons, the progress and advancement of this almost virgin land must necessarily be slow. However, it is hoped that the present European embassies which are about starting on a visit to the Sultan may be able to accomplish something in the right direction.

IMPORTS.

It may, perhaps, be of interest to show in a tabular form the total value of imports to Morocco during the last twenty years:

Years.	Value.	Years.	Value.
1870-'71.....	\$3,386,470	1880-'81.....	\$3,638,895
1871-'72.....	3,905,255	1881-'82.....	3,948,680
1872-'73.....	4,253,880	1882-'83.....	4,423,440
1873-'74.....	4,172,390	1883-'84.....	3,577,590
1874-'75.....	5,238,000	1884-'85.....	4,578,850
1875-'76.....	5,057,940	1885-'86.....	6,569,645
1876-'77.....	4,888,085	1886-'87.....	7,388,595
1877-'78.....	5,413,310	1887-'88.....	6,509,675
1878-'79.....	4,492,775	1888-'89.....	7,364,490
1879-'80.....	4,714,863	1889-'90.....	8,715,105

The total imports during 1889-'90 amounted to \$8,714,755, against \$7,310,810 last year.

Raw cotton.—The quantity imported was 827 cwts.; value, \$29,230. Prices ruled at about \$20 per cwt. for middling or lean.

Cotton goods, gray.—Bleached and printed cotton cloths from Manchester form an important item of the trade, and of late years English manufacturers have so successfully imitated the Pondicherry blue dyes as to secure for English dyed cottons a preference over the original goods from India.

The staple goods are T-cloths, gray, white, croydons, bleached long cloths, dyed bafts, and muslins of all descriptions (plain, embroidered, and printed) from Manchester and Glasgow.

Woolen cloths.—The original Yorkshire goods are now almost superseded by German and Austrian manufactures, particularly in the low-priced goods; but in the better classes England still holds her own. The values run from \$1.25 to \$4 per yard.

French textures.—French textures of all descriptions are imported only in small quantities; in silk goods, however, no other country has been able to compete with any success against Lyons and Nîmes.

Iron and hardware.—Birmingham and Sheffield are the chief sources of supply, notwithstanding German and Belgian competition in the lower qualities. Swedish and English iron in bars is largely imported, as well as Belgian. Other metals, chiefly brass, copper, bar-tin, tin, zinc, and brass and copper in sheets, are imported in small quantities for native manufacture, chiefly from England.

Loaf-sugar.—This article is the principal item of importation into this country from France, Marseilles having almost annihilated Belgian and Dutch competition in these markets. This article amounts to nearly half of the total imports from France. Brown sugar comes from England; some crushed comes from Austria and Germany.

Coffee.—Rio quality is imported second-hand from Marseilles, Havre, and London in rather small quantities. The usual value runs from \$12 to \$15 per cwt.

Teas.—Green hyson, young hyson, and gunpowder teas are imported from England in small quantities, the very cheap teas at from 10 to 25 cents giving place to the higher class of teas.

Drugs, spices, and chemical products.—These articles are imported in fair quantities from England and France and lately from Germany, but the articles are so numerous and varied that it would be impossible to enumerate them with any likelihood of precision.

Raw silk.—Raw silk is imported in quantities from Marseilles and Genoa for native textures at Fez, such as tissues, cards, and embroideries.

Cotton yarns.—Manchester supplies most of these—gray, bleached, and dyed—for the use of native weavers at Rabat and Fez.

Petroleum.—Petroleum is getting daily into more general use; it comes from New York and Philadelphia to Gibraltar and is transhipped to Tangier and other ports of the Empire. A case of two tins retails at from \$2 to \$3. Owing to the want of direct conveyance from America, petroleum from Batoum has commenced to be imported here.

Deals.—Since the civil war in the United States, this country adopted Swedish deals or planks, which it could at that time get at lower prices; still, several cargoes have been landed in Morocco since, and preference is given to American pine, when such can be obtained.

The present prices are as follows per 168 by 9 by 3 feet:

Swedish red deals (6 to 20 feet long).....	\$12.50 to \$14.00
American red deals (6 to 20 feet long).....	12.00 to 13.00
White deals (6 to 20 feet long).....	10.00
Pitch-pine deals (12 to 40 feet long).....	16.00

Flour.—Flour is largely imported from Algeria and France; some comes from the United States via England. There is a steady increase every year in the quantity imported, notwithstanding the presence of several steam flour-mills at Tangier and various other parts of the Empire. The increased importation of flour, provisions, and groceries is due to the ever increasing European population.

Candles.—The candle trade is one of the most considerable, and is chiefly supplied from England. Of the \$96,935 worth of candles introduced into the district of Tangier, \$85,905 worth come from England. The class of candles most in request is the paraffine, sold at \$1 to \$1.12½ per dozen packets, free on board at London; a box of 25-pound packets sells for \$2.75 at the Tangier *fondak* (stores).

No. 125—2.

Building material.—The rapid growth of the European population has given rise to a proportionately increased demand for all building materials, of which \$60,000 worth was imported last year, to Tangier principally, consisting of bricks, cement, deals, gypsum, iron rafters, tiles, etc. Bricks and tiles are mostly imported from France, notwithstanding the existence of several kilns, which produce a fairly good quality of brick and tiles, at this place, Tetuan, and Rabat. The iron joists are mostly of Belgian manufacture.

EXPORTATIONS.

The total exports during the years 1889-'90 amounted to \$7,554,850, against \$5,293,233 during the previous year. A decrease is reported in the value of exports at Tangier. It is from the western ports of Morocco that the agricultural products are shipped. The exports at Tangier consist, in a great measure, of oxen, fowls, and eggs to Gibraltar and Spain, rugs, slippers, and dates to Europe and Egypt. The slippers are all for Egypt, as well as some of the Morocco leather, which is of fine quality, durable, and well adapted for upholstery.

Almonds.—The crop has been fair, and prices ruled at from \$20 to \$24 per cwt., the value exported being \$705,845, shipped to England and France.

Bees-wax.—The present ruling price is \$25 per cwt. The quantity exported amounted in value to \$705,845, from the ports of Tangier, Tetuan, Casa Blanca, Mazagan, Saffi, and Mogador.

Birdseed.—Tangier, Laraiche, and Tetuan exported 6,946 cwts. of birdseed, valued at \$32,465.

Bones.—The permission for shipment of bones granted in May, 1888, having expired without prolongation, the quantity shipped appears as follows: From Tetuan, 680 bales, valued at \$1,700; Mogador, 460 tons, valued at \$3,450; Saffi, 160 tons, valued at \$2,480; Rabat, 159 tons, valued at \$2,400—all going to Great Britain.

Carpets.—Of this article, 395 bales were exported during the past year, valued at \$77,995.

Dates.—The date crops have been smaller than the previous years, although values are almost equal, say \$12 to \$20 per cwt. The total shipped from Tangier was 2,315 cwts., valued at \$30,100, mostly to England.

Goat-skins.—This article forms an important item of export to France. In former times large quantities of these skins were sent direct to America, but since Marseilles began to sell them ready-tanned direct shipments have ceased. At present small quantities are taken to London for transshipment to the United States. The current prices are from \$17 to \$20 per cwt. The value of skins exported was \$377,955, from the following ports: Tangier, 1,578 cwts., valued at \$17,390; Tetuan, 50 cwts., valued at \$625; Rabat, 1,374 cwts., valued at \$34,350; Casa Blanca, 838 cwts., valued at \$10,475; Mazagan, 1,545 dozens, valued at \$3,400; Saffi, 880 cwts., valued at \$13,200; and Mogador, 80,394 dozens, valued at \$298,515.

Grain.—There was a considerable exportation of maize and beans to Great Britain. A few shipments went to Madeira and Portugal.

Gums.—The principal gums shipped were brown gum, gum sandarac, and gum senegal, the joint value of which amounted only to \$48,175, the roads leading to sea-ports from places of production being unsafe for conducting goods.

Olive oil.—Olive oil shows a very large increase; 1,946 tons were shipped, the value being \$281,460, to England and France; \$1,500 worth went to Spain. The current price here is \$7 per cwt.

Orris root.—Of this article, the quantities shipped are exceedingly small at present, and, though in previous years large quantities were gathered for shipment abroad, the present tariff of duties on produce which is brought to the sea-ports so hampers all the low-priced articles as to render speculation for shipment almost impracticable. Up to a few years ago this article could be bought at about \$2.50, free on board; but lately, owing to the additional duties and taxes, it costs nearly twice as much. The same reasons may be applied to citrons, esparto, euphorbium gum, archil weed, horns, peas, rose leaves, sesame, and walnuts.

Palmetto leaves.—These would also be a source of great riches to the country people, owing to their unlimited abundance all over the country; but these are one of the prohibited articles, the Sultan thus absurdly losing quite a great revenue.

Wool.—Owing to the still depressed state of the markets in Europe for Barbary wool and their low prices, the shipments this year do not exhibit a material change. A large quantity of the clips, from its low value, has been retained in the country for the use of the native manufactories of carpets and woolen fabrics. The quantity shipped has been 11,810 cwts. of washed wool, valued at \$190,210, and 33,753 cwts. in the grease, valued at \$387,980, making a total of 45,563 cwts. of wool, valued at \$578,190, shipped mostly to England and France. The current price of wool at present is from \$10 to \$12 per cwt. according to quality, or from \$14 to \$16 per cwt. free on board.

Exports from Morocco during the past twenty years were as follows:

Years.	Value.	Years.	Value.
1870-'71.....	\$3,136,840	1880-'81.....	\$3,381,770
1871-'72.....	4,566,305	1881-'82.....	3,441,415
1872-'73.....	6,142,885	1882-'83.....	3,191,520
1873-'74.....	7,777,330	1883-'84.....	4,022,945
1874-'75.....	5,396,755	1884-'85.....	4,376,815
1875-'76.....	6,466,766	1885-'86.....	5,725,005
1876-'77.....	5,424,940	1886-'87.....	6,422,925
1877-'78.....	6,074,410	1887-'88.....	5,004,225
1878-'79.....	3,491,850	1888-'89.....	5,296,030
1879-'80.....	3,747,685	1889-'90.....	7,536,850

NAVIGATION.

British shipping consists of the small steamers trading between this port and Gibraltar—the steamers of the Mersey Steam-ship Company, which make the round from London to Gibraltar, Tangier, and the western ports of Morocco and back at intervals of from two to three weeks; and some pilgrim steamers every year to take and bring pilgrims from Tangier to Jeddah and back.

France, in point of tonnage, heads the list. The number of French vessels is not a third of those of England and Spain. The French steamers that come here are all of a fair size. Their shipping consists of the mail steamers of the *Compagnie Générale Transatlantique*, which visit Tangier once a week, and those of Messrs. Paquet & Co., of Marseilles, which run twice a month between Marseilles and the Canary Islands, calling at all of the Moorish ports of the Atlantic. A smaller vessel of this company also plies between Tangier, Larache, and Rabat, conveying the cargoes of the larger steamers that can not cross the bars of the two latter ports.

The Italian shipping consists exclusively of the steamers of the *Veloce* Company, of Genoa, which has made Tangier a port of call on the way to and from South America.

German shipping consists of the *Sloman's* steam-ships, which call here on their way from Hamburg to the Mediterranean, and the *Woermann* line.

Spanish shipping, if we deduct the small sailing craft, is composed of the subsidized mail boat that three times a week plies from Cadiz to Tangier and back and other steamers of the same company (*Compafia Transatlantica*), whose itinerary is from Cadiz to Tangier and all the western ports of Morocco and back.

The total tonnage of shipping entered was 769,862 tons, and 783,509 tons cleared at all the ports of Morocco.

AGRICULTURE.

The labor of agriculture is carried on in the most primitive style by the natives, as the want of civilization opposes the introduction of all kinds of machinery; and foreign implements of agriculture which have been tried have failed, as the country has not yet sufficiently issued from its normal state of barbarism and prejudiced ideas to admit of their use. This country is, unfortunately, subject to frequent visitations of droughts and locusts, that, also, in a great measure check the prosperity and increase of trade.

The real friends of the Sultan among foreign representatives are unceasingly urging upon him to remove the prohibition measures and give legitimate trade and agriculture greater scope for development; but so far their representations have proved unsuccessful, and this rich country is making retrogressive, instead of progressive, steps towards civilization, owing to its misguided Government.

FISHERIES.

That valuable fish the "tasergelt" (*Temnodon saltator*), known in America as the blue-fish, makes its appearance in great numbers on the southwestern coast of Morocco about the month of August, and stays until the beginning of December.

The large "azlimzah" (*Sciana aquila*), averaging about 30 pounds, are caught occasionally in large quantities. These huge fish are sold very low. Sardines and anchovies are caught in great numbers, salted, and taken to Spain and Portugal.

The "shebbel," or shad—almost equal to, although larger than, the American shad or the *Clupea alosa* of Europe—is caught in large quantities during winter and spring in the principal rivers of Morocco. Their average weight is about 8 pounds. The fresh fish is delicate in flavor, while the salted, even in the rough manner in which it is cured in Morocco, resembles a rich, mild-cured salmon. It seems probable that, among other of the many undeveloped industries of Morocco, something might be done in the curing and tinning of shad, sardines, and anchovies at some of the ports of Morocco.

Lobster and craw-fish also abound, but are only eaten by the European residents. Mackerel abound in these waters. Soles, red mullet, and turbot are only caught along the shores. Mussels of several varieties are caught on the rocks abounding on the coast. They are eaten mostly by the foreign residents; the natives on the southern coast also use them.

Numerous Spanish and Portuguese fishing craft are engaged all along the Morocco coast, carrying the fish to their respective countries.

F. A. MATHEWS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Tangier, December 6, 1890.

RAILROADS IN MEXICO.

REPORT BY CONSUL RICHARDSON, OF MATAMOROS.

I have the honor to inform you that work has been resumed on the Corpus Christi and South American Railroad under the direction of Griffin Brothers, contractors, of Minneapolis, Minn. There can be very little doubt that the 150 miles between the initial terminus and Brownsville will be built during the coming year. This road was inaugurated August 4, 1890, and after about 6 miles of it were graded work was abandoned for some unknown reason. Lack of funds was alleged. There was some ground, however, for the suspicion that it had served its purpose in making real estate speculators in Corpus Christi unload some city property of uncertain value. Now it seems that work has been resumed in good faith and will be pushed energetically until Brownsville and Matamoros are brought into living contact with trade centers in the United States.

On August 23, as previously reported, the Matamoras, Tinares, and Matehuala Railroad was formally inaugurated. This road was designed to directly connect Matamoras with Matehuala, a distance of 360 miles, and thence later to be pushed on to San Blas, on the Pacific coast. After grading some 7 miles, work was stopped. Lack of funds was here, also, given as a reason. The prevailing opinion was that the road was inaugurated simply to save the concession from forfeiture. There are now some indications of an early resumption of work. If this is done, the commercial condition of Brownsville and this city will be very materially improved.

JOHN B. RICHARDSON,
Consul.

UNITED STATES CONSULATE,
Matamoras, November 19, 1890.

THE POTATO AND ITS BLIGHT.

REPORT BY COMMERCIAL AGENT REID, OF DUNFERMLINE.

In the region where this report is written the potato crop is one of the most important and successful products. Occasionally large shipments are made to America. Like all useful animate life, be it plant or beast or man, the potato has its special enemies, against whom scientific inquiry is lately directing careful attention and pointing out lines of treatment to all interested in its successful culture.

The apparently most active enemy of the potato is a fungus bearing the scientific name of *Peronospora infestans*, and is one of those mischievous agencies which would seem to be forever prowling about, ready to seize upon any subject whose limited vitality invites the attack. In potatoes, as in many other things, the fittest survive. A strong, healthy potato plant, grown in advantageous conditions as to soil, climate, and weather, can defy all attacks. A weak plant in unfavorable environments falls an easy prey to its fungus enemy.

It is assumed by recent investigation that the germs of the *infesta*, or fungus, are always present. With conditions congenial to fungus development, the fungus growths spring forth in myriads, carrying devastation wherever they appear. These congenial conditions are damp, dull, calm weather, a moist or wet soil, and mist.

The fungus generally delays its coming until towards the end of July. Its annual life history may be stated as follows: It is believed that the first attack of fungus is on the leaf. There it is first seen in a delicate white bloom, accompanied by dark blotches, caused by the spawn of the fungus having pierced the leaf and set up putrefaction. These early appearances will be seen in greatest profusion in the lower, or drooping, leaves, which may be covered with moisture and are not exposed to the drier air playing upon the upper leaves. If the climatic conditions are favorable to the fungus, it will de-

velop rapidly, ramifying throughout the leaves, blasting them in its progress, and sending into the air an exceedingly offensive odor.

The power of reproduction of this mysterious fungus is so wonderful that, with a favorable temperature (from 60° to 80° F.) and a moist atmosphere, one growth, or germ, will in a few days multiply ten thousand times. The spores, or germs, of the disease are so light and fine that they float in the air, while by insects and birds they are carried about in vast numbers. The disease will usually begin at only one or two centers, but, by the germs carried from plant to plant in a moist breeze, it rapidly covers the entire field. It may, indeed, and does, pass from one field to another, for in a dull, misty morning or evening the tiny, but deadly, germs may be conveyed to long distances.

From the leaves the fungus spreads successively to the leaf stalks, the gems, and the tubers; the latter may also be reached by the spores, or germs, falling from the leaves, and carried thence through the soil by moisture. The spawn of the fungus would seem to have no difficulty in piercing the skin of the tuber. When it has done so, it consumes, or rots, the cells and corrodes the starch, and ultimately may reduce the entire tuber to a black mass of rotteness.

In this last stage of its active course of destruction the fungus provides means for perpetuating its own life. It produces myriads of "resting spores," which lie dormant during the winter and spring and carry on the disease to the crop of the following year, which, in turn, passes the fungus through another round of its curious life, to be handed on again from crop to crop. Except these resting spores, it is thought that every part of the fungus perishes with the plants upon which it has developed. These resting spores, however, would seem to be possessed of amazing vitality. They live through the winter and spring in decayed potato material, ready to throw out new growth in the following year. The average loss of the present year will not be far from one-tenth of the whole crop.

Many remedial measures have been tried. Those which have been found most useful in preventing or mitigating the onslaught of the fungus are: (1) Earthing up the potato drills with a deep covering of earth, with the view of preventing the fungus from passing down the stem or through the soil to the tubers; (2) cutting off the diseased potato tops before the fungus reaches the tubers; (3) removing and burning all dead and decaying potato stems, leaves, and tubers, especially after a crop which has been attacked by the disease; (4) planting varieties which have been known to be exceptionally successful in resisting the disease; (5) growing the potato crop under such general cultural, sanitary, and manurial conditions as will insure to the fullest extent possible the healthy and vigorous development of the crop; (6) carefully selecting and storing of potatoes to be used as seed.

As yet no certain prevention or absolute remedy has been discovered against this pest; but all these recommended measures have been carried out with such marked and hopeful advantage as to be not unworthy of attention,

even by American growers, aided, as they are, by greatly superior climatic conditions.

THE SEASON'S CROPS.

As this report is being written potatoes are in keen demand. November has come, but all are not yet lifted. Regents and Champions sell readily at \$15 a ton. These are the kinds in which the disease has shown itself most. Not much of these are now planted. The quantity, after deducting the injured, is not up to the product of last year. The instances are not numerous in which Regents will reach 5 tons of dressed potatoes per acre and 2 of small ones; Champions yield a little more. Magnum Bonums are a larger crop and have less disease; they will yield from 7 to 8 tons per acre after careful riddling with the usual $1\frac{5}{8}$ -inch riddle, by which about a ton or less escapes; sales of these are not looked for until spring, and they are being pitted. The Bruce potato is coming into use; it gives as good a crop as the Magnum Bonum, with equal immunity from disease. Red Cups are preferred by some farmers; they are a good crop, excellent in quality, and almost free from disease, except when grown for a long time without change of seed or planted in damp soil.

JAMES A. REID,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Dunfermline, December 10, 1890.

AUSTRIAN POSTAL SAVINGS-BANKS, TELEGRAPHS, AND TELEPHONES.

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

POSTAL SAVINGS-BANKS.

Thinking that a report on the postal service of Austria at the present time may be opportune, I submit the following statistics relating to the postal, telegraph, and telephone service, which are combined in this country, and also point out, and draw particular attention to, the postal savings-bank and its check and clearing systems.

The greatest portion of the daily deposits in the postal savings-banks is derived from the merchants, who, by the check and clearing system—exactly like the one prevailing in our private banks in the United States—deposit their receipts daily and draw them out by check on demand without previous notice. Still, the original purpose of this law, viz, to encourage the working people to deposit their small earnings in this Government savings-bank, is carried out with satisfactory results, and the receipts from these sources are constantly increasing. It affords a safe depository for the surplus earnings of the mechanics, farmers, clerks, laborers, domestics, children, and others; it aids in the financial training of the young, and promotes among the masses of the Austrians, who, as a rule, are not inclined to be saving, habits of fore-

thought and economy; it is, in fact, designed to be the financial trustee of the wage workers and the place where they can leave their savings with absolute safety.

Below I beg to give you a history of the Austrian postal, telegraph, and telephone service, and its gradual development under the present Government, and its successful management under one head and roof.

POSTAL TELEGRAPHS.

Up to the sixteenth century the postal service in Austria was a private enterprise, but from that time on it became a royal prerogative in all respects concerning mail and passenger service and passed into the sole possession of the State. In the year 1847 the telegraph was declared a prerogative of the State, and in 1887—thirty years later—the telephone likewise. The right of conveyance by stage-coach was abolished in 1867.

Until 1883 the postal and telegraph service was managed separately, and the general post-office was quite apart from the general telegraph office; but then the two were combined into one office, to which in 1887 the telephone was also added.

Up to the year 1867 the postal system was in a very primitive condition. Its improvement dates from the time of the so-called civil ministry (*Bürger Ministerium*), whose first laudable act was a reduction of the postage; and during a period of twenty-two years every thing in regard to the post system underwent a thorough change and reform, and it was brought to such a state of perfection as to rival the post system in the most civilized countries of the world. Until 1867 postal communication consisted in the transportation of passengers, letters, newspapers, and parcels. In quick succession every notable kind of postal and telegraphic communication in use to-day was introduced.

In 1882 the postal savings-bank was instituted, with its present grand check and clearing intercourse, the union of the postal and telegraph was completed, the railway postal service established, the postal treaty with Germany extended, special treaties entered into with Servia and Montenegro, the treaty with Hungary reformed, and agreements made with most of the European and many foreign countries concerning the money-order system, both by mail and telegraph.

Austria was one of the first countries which joined the World's International Postal Union.

During that period the old rules were altered and new ones introduced, the service of the accountants and comptrollers was reformed in accordance with the spirit of the times, the institution of central inspection and traveling commissioners was inaugurated, post-offices were built at the expense of the Government, and now the establishment of a postal museum in Vienna is being contemplated.

During later years particular care has been given to the education of the officials connected with the postal service, and annual lectures are held

on postal and telegraph matters by prominent professors under the auspices of the Government. The postal course is taught theoretically, the telegraph and telephone courses practically, and, when the course is completed, the student has to pass the prescribed examinations. The officials must be raised in both branches and are obliged to pass the examinations, which are regulated by precise methods, and on the result of which employment and promotion depend.

The principle upon which the Austrian postal, telegraph, and telephone service is based is that this service is not to yield any profit, but only to promote the general welfare. The financial point of view being utterly disregarded, the entire service is organized on this basis.

Organization.—The minister of commerce acts as postmaster-general. The postal service is administered by the third section of the ministry of commerce at Vienna. At the head of it stands the director-general of postal, telegraph, and telephone affairs, at present Johann K. Ritter von Obentraut.

The post-office section is divided into eight departments. At the head of each is placed an able manager.

The supreme superintending officer of the ministry of commerce is Hofrath Koch von Langentren, who travels through Austria attending to all necessary matters, encourages and blames while inspecting, and is equally liked and feared.

The most important post-offices of Austria, which are called general post-offices, are located at the following ten places: Vienna, Lintz, Grätz, Trieste, Innsbruck, Prague, Brünn, Lemberg, Czernowitz, and Zara.

To every general post and telegraph office a technical division for telegraph and telephone construction is attached; through this division all the lines are built at the expense and under the management of the Government. Each general post-office has its financial and auditing department, which sends regular reports to the ministry of commerce at Vienna.

The offices in these bureaux are filled by two classes of officials, viz, those appointed by the State, who occupy the most prominent positions, and subordinate officers employed under contract.

The post, telegraph, and telephone are always in the same building and in one office.

In operating the telegraph, Morse's apparatus is chiefly employed; Hughes's apparatus is used on lines which are much frequented. An improvement has recently been made on the Morse apparatus, causing it to work without discontinuance of action or variation in the strength of the current. The invention has been patented, but not, as yet, practically employed. The patent is private property.

TELEPHONES.

Regarding the telephone, the most manifold apparatus are being tried, and a uniform system has not yet been determined upon. Between Vienna and Prague the microphone invented by Berliner, a so-called universal transmitter, is in use.

Up to 1887 there were only thirty small lines in Austria. In that year the first long line, a distance of 158 kilometers,* extending from Vienna to Brünn, was opened for traffic. The trial having proven perfectly successful in every respect, the Government determined upon operating on a larger scale, and, next of all, to join Vienna with the principal provincial towns by telephone.

The line from Vienna to Prague, a distance of 350 kilometers, was opened on October 1, 1889; a few months later Vienna and Buda-Pesth were connected by telephone.

In case a private party wishes to join his telephone with a State telephone, he must apply to the post-office department of the ministry of commerce, which will make the connection.

The charge for a length of line up to 500 kilometers is 50 florins;† over 500 kilometers, 10 florins for every additional 100 kilometers. A yearly subscription fee and other expenses connected with it amount to 50 florins.

The public pays on the most prominent line 1 florin for from three to five minutes' use and 3 florins in urgent cases requiring haste. The tariff for distance is 1 kreutzer‡ per kilometer.

Since the opening of the Prague-Vienna line, the calls have averaged one hundred and twenty daily, one-third of which were urgent ones.

On the whole, about 1,000 kilometers of telephone line are in operation in Austria.

POSTAL SAVINGS BUREAU.

The law regarding the postal savings bureau passed by the Reichsrath of Austria on May 28, 1882, provides in substance as follows:

The State guaranties the deposits and places the postal savings depots under the control of the minister of commerce; all post-offices designated for that purpose by the minister of commerce serve as places of deposit.

Article 1 provides that the name of the institution is to be the postal savings bureau (*Postsparkassenamt*), this bureau to be a separate department to be carried on in connection with the post-office department.

Article 2 provides that the savings deposits shall be received by the postal savings-banks and paid out through the post-offices.

Article 3 provides that all deposits exceeding the probable amount to be drawn by depositors are to be invested in interest-bearing Austrian securities, the investment to be made by the postal savings bureau.

Article 4 provides that out of the proceeds of these securities all interest on deposits, as well as all current expenses, are to be paid. If the amount of such proceeds should at first be insufficient for this purpose, the deficiency is to be paid by the State and charged to the account of the post-office department; these advances to be repaid out of the surplus of the postal savings bureau at the close of the year, and the balance of surplus remaining after such payment to serve as a reserve fund.

* 1 kilometer = 0.621 mile.

† 1 florin = 40 cents.

‡ 1 kreutzer = 0.42 cent.

Article 5 provides that every depositor shall receive a deposit book from the post-office where he makes his deposit, in which book every deposit, every repayment, and the interest due are to be entered. The deposit book is to be furnished gratis and free of stamp duty. The postal savings bureau is to open a separate account for every depositor.

Article 6 provides that the deposit book is to be issued in the name of the party making the deposit and is to contain a description identifying the depositor and also his signature.

Depositors who can not write are required to be accompanied by a trustworthy person who can identify the depositor, and who must sign the deposit book in his stead.

A transfer of the deposit book will only be recognized if such transfer has been made at a post-office designated as a place of deposit.

Minors are authorized to make deposits and to withdraw them, unless objection in writing is filed by their guardians. In case of the loss of a deposit book, a duplicate will be issued. Only one deposit book can be issued to one and the same person.

Whoever obtains more than one deposit book forfeits the interest on all moneys deposited and entered in the additional books.

The officers of the post-office are prohibited from giving to any person, except their superiors, any information whatever with reference to the names of depositors and the amounts deposited.

Article 7 provides that every deposit must amount to at least 50 kreutzers (20 cents). The total amount of each deposit account shall, after deducting the amount drawn out, not amount to more than 300 florins (\$120) in any one year.

The total sum standing to the credit of one depositor for principal and interest shall, after deducting the amount drawn out, not exceed the sum of 1,000 florins (\$400).

Deposits not exceeding 50 kreutzers may be made in postage-stamps, or in postal savings stamps whenever the latter stamps shall have been issued by the minister of commerce. The stamps are to be pasted on blanks furnished by the minister of commerce.

Article 8 provides that the rate of interest on deposits shall begin to run on the 1st and 16th of the month succeeding the day of deposit, and interest ceases on the 1st or the 15th of the month preceding the notice of withdrawal. No interest is to be paid on sums under 1 florin. On the 31st day of December of each year the amount of interest due is added to the interest-bearing principal.

Article 11 provides that the postal savings bureau shall be required to notify depositors, whenever their deposit exceeds 1,000 florins, and request them to reduce their deposits. If, within one month after such notice, the depositor does not reduce his deposit, the bureau is authorized to buy interest-bearing bonds for account of such depositor and to notify him of their purchase.

During the time intervening between the notice to reduce the deposit and the day of reduction no interest is paid. In case depositors do not take possession of such securities purchased as aforesaid, the postal savings bureau draws the interest on the same and credits the amount to the depositor's account as a new deposit. The depositor receives a book, in which the securities held by the postal savings bureau are entered.

Article 12 provides that at the request of the depositor his deposit, if sufficient in amount, may be invested in Austrian State bonds.

Article 13 provides that the repayment of a deposit shall be made only upon notice to a post-office designated as a place of deposit. Such repayment is to be made on presentation of a written order of the postal savings bureau. Sums not exceeding 20 florins may be repaid on demand; sums from 20 to 100 florins, in fifteen days; from 100 to 500 florins, in one month; and sums exceeding 500 florins, in two months after notice.

Article 14 provides for manner of application for new deposit books in place of those lost.

Article 15 provides that general statute of limitations shall apply to savings deposits, but that every new deposit, notice of withdrawal, and every entry of interest shall take place out of statute.

Article 16 provides that securities purchased on account of depositors shall be forfeited to the post-office department, if the same or interest on the same has not been claimed within forty years.

Article 17 provides that the books of deposit and amounts deposited can not be attached or garnisheed; but this provision does not apply to the securities held in trust, as provided. If a depositor is adjudged a bankrupt, the assignee in bankruptcy may attach and receipt for his deposits.

Articles 18 and 19 provide that the reserve fund shall be created by the surplus remaining after payment of interest and expenses arising from the usufructuary management of the deposits. This fund is gradually to be raised to a sum equal to 5 per cent. of the total deposits, but shall not exceed 2,000,000 florins. This reserve fund is to be placed on interest, this interest to be added to the principal until the maximum is reached, and, whenever it exceeds the maximum, the excess is to be credited as receipts of the post-office department.

Article 20 provides that a full report of the status of the post-office savings bureau shall be published annually by the minister of commerce and be submitted to the Reichstag.

Article 21 provides that all correspondence appertaining to the postal savings bureau shall be free of postage.

The postal savings bureau is located in Vienna and is in charge of the ministry of commerce. All post-offices have a bureau for receiving and paying money. The duties of the savings-bank are:

(1) To receive and book the amounts deposited, to properly invest the money in Government securities, to pay interest on it, to book the notification of drawing, and to pay the money when called for, either at the place of deposit or by means of money-orders or checks at some other place.

(2) The cashing of checks. This is done for the bearer at the cashier's window of the postal savings-bank, or, if the check is sent by post in the form of a money-order, it is cashed at some other office when presented by the bearer.

(3) Buying and selling Government securities.

(4) In the clearing business, the transfer of credit from the account of one member to the account of another.

Nowadays the postal savings-bank is the most popular institution in Austria, and the amount of deposits has surpassed all expectations. The clearing business has also exceeded the mark and has grown to enormous dimensions. Young people are the chief investors in the postal savings-bank, and to them most of its success is due.

The loss sustained in the revenues of the post through the establishment of the postal savings-bank amounts to millions of florins, it is true, but it is amply counterbalanced by the easiness with which the transfer is effected and by indirect profit.

The most important stipulations of the law respecting the postal savings-banks are:

Savings business.—No charges are to be paid, except 10 kreutzers for the book in which the deposits are noted; the highest deposit is 1,000 florins, the lowest 50 kreutzers; deposits to the amount of 50 kreutzers can be made in postage-stamps; interest is paid at the rate of 3 per cent.; no interest at all is paid on credit exceeding 1,000 florins; the rate of interest may be decreased, but not increased above 3 per cent.; return payments above 20 florins, if notice is given beforehand, can be received at any post-office and independent from the place where the first deposit was made; any post-office can make return payments up to 20 florins without previous notice.

Check business.—The amount of the deposits is unlimited; a check must not exceed 10,000 florins; a permanent deposit of 100 florins, bearing no interest, makes one a member of the check and clearing department; 2 per cent. interest is the highest rate paid on deposits in the check and clearing business; for every entry 2 kreutzers are charged, besides a commission of one-fourth per *mille*.

Depositors in the savings-bank who have a good credit can at any time desire the savings-bank to buy Government securities, for which a commission of 2 per *mille* is charged. For the cashing of coupons 1 per *mille* is charged.

The most important rules and taxes in the Austrian post and telegraph system are as follows:

Letters.—An ordinary letter, up to 20 grams, costs, post-paid, 5 kreutzers; not post-paid, 10 kreutzers. A local letter is 3 kreutzers, if post-paid, and 6 kreutzers, if not post-paid. A double letter, weighing from 20 to 250 grams, is 10 kreutzers, if post-paid, and 15 kreutzers, if not post-paid. A city letter of the same weight is 6 kreutzers, if post-paid, and 9 kreutzers, if not post-paid. Letters weighing over 250 grams are excluded from the mail, and are to be considered as parcels and transported by the parcel post.

In the intercourse with Germany the same rules hold good, only the weight of an ordinary letter is fixed at 15 grams.

Printed matter.—The postage on printed matter is as follows: Up to 50 grams, 2 kreutzers; from 50 to 250 grams, 5 kreutzers; from 250 to 500 grams, 10 kreutzers; from 500 to 1,000 grams, 15 kreutzers. Printed matter weighing over 1,000 grams must not be forwarded by mail, but by express.

Letters and parcels.—Letters and parcels containing samples of merchandise, weighing 250 grams, cost 5 kreutzers; if the weight is more than 250 grams, they are not received at the post-office. The postage must be paid beforehand.

Postal-cards.—The price of these is 2 kreutzers apiece; those with a reply card attached are 4 kreutzers apiece.

Newspapers.—When mailed by private parties, newspapers have the same postage that printed matter has. When sent from the publishing office daily or several times a week, they are 1 kreutzer a copy, independent of the weight. Over 1,000 grams is not permitted.

Registration.—All articles sent by mail, except newspapers from the publishing office, can be registered; charges, 10 kreutzers. Indemnification in case of loss is 20 florins.

Express.—All consignments by mail may be made by express. Express charges are 15 kreutzers; messengers' charges, 50 kreutzers. Both fees are to be paid beforehand in stamps.

Return receipts.—These are allowed for registered articles; fee, 10 kreutzers.

The following stamps, stamped envelopes, etc., can be obtained at all post-offices. Stamps 2, 3, 5, 10, 20, and 50 kreutzers; stamped envelopes, 5½ kreutzers; postal letters, 3 and 5 kreutzers; postal savings tickets, 5 kreutzers; newspaper stamps, 1 kreutzer; newspaper wrappers (stamped) 2½ kreutzers.

Money-orders by post or telegraph up to 500 florins may be sent off at any post-office in Austria. Money-orders amounting to 5,000 florins can be sent by any post-office to Vienna, but subordinate offices are only entitled to send or receive 1,000 florins among each other.

The charges for money-orders are:

Description.	Charges.	Description.	Charges.
	<i>Florins.</i>		<i>Florins.</i>
Up to 5 florins.....	0.05	From 150 to 300 florins.....	0.30
From 5 to 50 florins.....	.10	From 300 to 500 florins.....	.50
From 50 to 150 florins.....	.20	From 500 to 1,000 florins.....	1.00

For every additional 1,000 florins or fraction thereof 50 kreutzers are added.

TELEGRAMS.

Besides the regular tax, the fee of delivery is from 15 to 50 kreutzers, according to distance. Another 10 kreutzers is charged for the written receipt. The taxes and rules for the postal commissions are the same as those of the universal postal union. Austria keeps up a very lively intercourse with all European and foreign countries by means of telegrams, letters, money-orders, etc.

PARCEL POST.

There may be sent by parcel-post without any royal prerogative: (1) All articles of value; (2) private letters weighing over 250 grams; (3) money, letters, and parcels containing money in bags, chests, barrels, etc.; (4) articles of freight, such as jewels, goods, furniture, small live animals, etc.; (5) all articles sent C. O. D.

Prohibited from transportation are such articles as are likely to be injurious to others, especially explosives. Taxes for parcels and letters containing money are affixed to both the weight and value, and are the same for Germany and Austria.

The tariff of postal rates for Austria-Hungary for parcels weighing up to 500 grams is: 10 miles, 12 kreutzers; 20 miles and upwards, 24 kreutzers.

Table showing postal tariff rates for Austria-Hungary and Germany.

Weight of parcels.	10 miles.	20 miles.	50 miles.	100 miles.	150 miles.	Over 150 miles.
	Florins.	Florins.	Florins.	Florins.	Florins.	Florins.
5 kilograms.....	0.15	0.30	0.30	0.30	0.30	0.30
6 kilograms.....	.18	.36	.42	.48	.54	.60
7 kilograms.....	.21	.42	.54	.66	.78	.90
10 kilograms.....	.30	.60	.90	1.20	1.50	1.80
15 kilograms.....	.45	.90	1.50	2.10	2.70	3.30
20 kilograms.....	.60	1.20	2.10	3.00	3.90	4.80
24 kilograms.....	.72	1.44	1.58	3.72	4.86	6.00

Table showing charges on money letters (all distances).

Amounts.	Charges.	Amounts.	Charges.
	Kreutzers.		Kreutzers.
50 kreutzers.....	3	9 florins.....	18
1. 50 florins.....	6	10. 50 florins.....	31
3 florins.....	6	15 florins.....	40
4. 50 florins.....	9	21 florins.....	45

In case of loss, the declared value of the article will be paid.

Each post-office is furnished with a mile-stone indicating the distances from it of all places in Austria and Germany.

The weight of an article sent by parcel post must not exceed 50 kilograms;* when post-paid, 6 kreutzers per kilogram is charged. In case of bulky goods, half the amount of the tax for weight is added to the ordinary tax.

* 1 kilogram=2.2 pounds.

When articles are sent by express, the express fee and the regular messengers' fee are always to be paid in advance. Goods not delivered cost 15 kreutzers; delivered goods cost 30 kreutzers. These fees are the same whether the delivery is made at night or during the day.

The taxes for the delivery of parcels at Vienna and Prague are :

	Kreutzers.
Up to 1 ½ kilograms.....	5
1 ½ to 5 kilograms.....	10
Over 5 kilograms.....	15

Though the parcel post has had strong competition in the way of railroads and private undertakings, it has been steadily increasing. It does not pay, but has been retained for the convenience of the public.

Of late, in Vienna, Prague, and several other large cities the delivery of parcels without discrimination of weight, by means of carts expressly constructed for the purpose, has been successfully introduced.

The parcels are delivered at the home of the person to whom they are addressed.

TELEGRAPH FEES.

For each telegram a main charge is to be paid and an additional charge for words, as follows :

Description.	Main charge.	Charge for words.
	Kreutzers.	Kreutzers.
Local telegrams.....	12	1
Telegrams to any part of Austria-Hungary.....	24	2
Telegrams to Bosnia and Herzegovina.....	30	4
Telegrams to Germany.....	30	4

For telegrams to other countries the universal telegram tariff is used.

The fee for the sending or delivering of telegrams by telephone through subscribers to the State telephone amounts to 5 kreutzers.

The revenue of the telegraph before its union with the post was very weak, and is still so, but since that time a separate balance of the revenues and expenses no longer occur in the statistical estimate.

Austria has considerable intercourse with the United States through her postal and telegraph service, and lower telegraph rates should be agreed upon. Addresses on letters ought to be very exact; this fact can not be enjoined too forcibly.

The following is a statistical extract of the postal and telegraph affairs of the countries represented in the Austrian Parliament: Extent of territory, 300,024 square kilometers; number of inhabitants, 22,000,000; of general post-offices, 10; ordinary post-offices, 4,484; telegraph offices, 3,361.

The number of persons employed in the administrative service is 934; in the manipulation service, 21,440, of which 13,000 are State officers and 8,440 officers employed under contract.

The number of communications yearly amounts to 572,000,000 in all, divided thus :

	Number.
Letters.....	317,000,000
Postal cards.....	78,000,000
Printed matter.....	44,000,000
Samples.....	9,000,000
Business papers.....	1,000,000
Money orders.....	14,000,000
Packages sent C. O. D.....	3,000,000
Post commissions.....	260,000
Money letters.....	17,000,000
Parcels.....	19,000,000
Newspapers	70,000,000
Travelers.....	182,000,000
Telegrams.....	7,000,000

The yearly revenue and expenditures are as follows :

	Florins.
Total revenue of telegrams.....	27,000,000
Total expenditures.....	24,000,000
Net proceeds.....	3,000,000

The greatest revenue was that of lower Austria, with Vienna, viz, 36 per cent. of the whole.

TELEGRAPH APPARATUS.

The number of telegraph instruments in State use is 2,700 Morse, 106 Hughes, 5 multiplex, and 2 D'Arlincourt's translators ; in railway use, 2,700 Morse ; in private use, 147 Morse.

The number of railway trains used by postal service is 1,401 daily. The number of postal steamer lines on rivers is 27 ; the length of their course is 21,000 kilometers.

JULIUS GOLDSCHMIDT,

Consul-General.

UNITED STATES CONSULATE-GENERAL,

Vienna, December 17, 1890.

CHANGES IN THE TARIFF OF SPAIN.

REPORT BY MINISTER GRUBB, OF MADRID.

I have the honor to inclose herewith a clipping, with translation, from the Official Gazette, being an open letter from the minister of finance to the Queen Regent, and a royal decree by Her Majesty pertaining to the new Spanish tariff, which goes into effect on January 1, 1891. The same may be of interest to the Department.

E. BURD GRUBB,

Minister.

UNITED STATES LEGATION,

Madrid, December 29, 1890.

THE MINISTRY OF FINANCE TO THE QUEEN REGENT.

[Inclosure 1 in Minister Grubb's report.—Translation.]

MADRID, *December 24, 1890.*

MADAM: In the midst of the extraordinary crisis now suffered by the customs tariff system of almost all the principal nations of Europe and America, Your Majesty's Government may commence the series of its labors with the two advantages of a programme prepared a long time since and of an ample legislative authorization.

National agriculture and cattle raising, impoverished by causes of a different character, overwhelmed by taxes, deprived of markets, threatened in the very centers of their productions by a formidable competition, solicit by incessant clamors the help of the State. Many industries claim, with evident justice, the tariff protection for their sustenance, without which the development of wealth and the formation of capitals, which are so scarce in the country, are impossible. The direction of ideas in both continents is almost universal towards the protectionist sense, and, with an irresistible push, drives governments to the adoption of energetic attitudes which may protect the economic and independent life of each nation against the assaults of individual and cosmopolitan doctrines. In such a situation there is no room for doubting which is the course to be followed without hesitation by the political men who in 1875 suspended the reductions of duties granted by the legislation of 1869, and in 1877 established the two columns of the tariff customs, and afterwards have unremittingly advocated the interests of national production.

Their convictions being so firm and their purposes so strong, the present ministers of Your Majesty would have undertaken the reform from the very moment they were called to the direction of public affairs if the legislative authorization, which, in favor of their doctrines they may avail themselves of, would not have been granted to them under the condition of having in mind the result of the inquiry which was being made and which has now terminated.

There is, besides, a difference to be established between the goods the tariff duties of which are agreed upon with other nations and those goods which are free from that condition. With reference to the former, the action of public power is already free, the solution proposed some time since, and general opinion prepared. With regard to the latter, it is deemed advisable, above all, to allow to the Government the greatest liberty for the future negotiations on denunciations, and, if the case happen on celebration of treaties of commerce, although designating at once through a general tariff of protection the limits of the tariff defense of agricultural, cattle raising, and industrial interests of Spain, the threat of new general reductions of duties must immediately and completely disappear.

The regulations contained in the basis 5 of the appendix C of the law of budget of revenues of July 1, 1860, the execution of which was suspended by the royal decree of June 17, 1875, and was re-established by the law of July 6, 1882, never had a logical foundation in the ground of doctrines and have been impractical in that of facts. The proportions between the value of articles and the prices quoted in the tariff, calculated by the average prices of the articles of importation most abundant among those of each generic group, constitute an empty and arbitrary system, which, in many cases, is devoid of accuracy, having, besides, no scientific value. Articles, the value of which very considerably differ, are charged with an equal amount of pesetas duty when, for instance, a type of impost of 20 per cent. is fixed to one of them, whilst under that system the article worth the sixth part of that taken as a standard is charged with even more than 20 per cent., or 2 per cent. only on the article worth ten times more.

These defects are nevertheless much less important than the general sense of the plan founded on the doctrine that the question of agriculture and industry must not be considered by legislators as a direct interest of the nation, but must be submitted with indifference to the free influence of the general laws of economic facts, in virtue of which laws it is obvious that nations which do not know how to defend themselves are ruined, as is done by those which have not reached a degree of prosperity free from foreign competitions.

In order to realize what is at once possible and to be duly prepared for what requires more time and other proceedings, I have the honor to submit for Your Majesty's approval, by accord of the council of ministers, the inclosed project of a decree.

THE ROYAL DECREE.

[Inclosure 2 in Minister Grubb's report.—Translation.]

ARTICLE 2. From the 1st of January, 1891, the merchandise hereafter expressed shall pay to the customs the following import duties:

Articles.	Duty.
	<i>Pescetas.</i>
Geldings over the mark*.....per head.....	180.00
Other horses and mares.....do.....	135.00
Mules.....do.....	80.00
Asses.....do.....	12.00
Cattle.....do.....	40.00
Hogs.....do.....	20.00
Sheep, goats, and other animals not herein mentioned.....do.....	2.40
Meats:	
Pickled and dry salted.....per 100 kilograms.....	11.60
Pork and lard (bacon included).....do.....	50.00
Other kinds.....do.....	18.00
Rice:	
Unhulled.....do.....	5.30
Hulled.....do.....	10.60
Wheat.....do.....	8.00
Wheat flour.....do.....	13.20
Other cereals in grain (millet excepted).....do.....	4.40
Flour of the above.....do.....	7.15

* A horse must be 63 Spanish inches high to be considered as having the mark.

ART. 4. In the duties marked in article 2 there are comprehended those which, under the name of transitory, are now paid by merchandise therein mentioned.

ART. 5. The Government, having before them the propositions of the commission formed for the purpose of studying the tariff reform and the commercial treaties, will make and publish at its proper time the general customs tariff that is to be in force after February 1, 1892, and in which it is only afterwards that opportune alterations for the reduction of duties in reciprocity for advantages granted by other countries to the products and commerce of Spain can be made.

ART. 6. The Government will duly inform the Cortes of this decree, as well as of the general tariff that will be published.

RAILROAD CONSTRUCTION IN SIAM.

REPORT BY CONSUL-GENERAL CHILD, OF BANGKOK.

I have the honor to report that at last the Siamese will construct one, if not two, railways. The first will extend from Bangkok to Korat, a distance of 170 miles. This line has been surveyed by English engineers, and runs through a fine section of country. Inclosed I send you an announcement in

regard to its construction, stating that work will be commenced early next year. As will be seen, the road-bed, bridges, etc., will be let out to the lowest bidder.

The road will be built almost entirely with money furnished by His Majesty King Chulalonkarn, who has contributed \$10,000,000 out of the treasury for the purpose.

It would be well for some of our American manufacturers to put in bids for rolling stock, as our light locomotives are more suitable than the heavy engines of European make. It is asserted that ground will be broken and work commenced on this line next January, but that means some time next spring, if not later.

The Borapah Railway, from Bangkok to Patriew, of which I inclose a prospectus, extends a distance of 36 miles southeast of the city. About half of the money needed has been subscribed, but it is generally thought that nothing will be done towards building the line until the road to Korat has been commenced.

JACOB T. CHILD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Bangkok, October 20, 1890.

ROYAL SIAMESE STATE RAILWAYS.

[Inclosure in Consul-General Child's report.]

It is hereby notified for general information that tenders, in the form of a schedule of rates for each class of work required, will shortly be invited for the construction of the Royal Siamese State Railways from the capital of Bangkok to Bang-Pa-In, Ayuthia, Saraburi, and Korat, 268 kilometers. The works will be let out either in sections of from 70 to 100 kilometers or given to a general contractor.

The tenders will include all works and supplies necessary for completing the said railways, exclusive of the supply of permanent way and telegraph material, rolling stock, machinery, and furniture, which will be provided by the Royal Siamese Railway administration and delivered, when required, to the contractors in the depots at Bangkok and Ayuthia.

In every other instance the contractors are expected to supply themselves with all the necessary plant, such as tools, small railways for earth and other provisory transport, excavators, pumping and ramming machinery, etc.

Those intending to tender are advised to personally examine the line and the plans, which may be seen from January 1, 1891, at the office of the royal railway department in Bangkok.

The following figures represent, approximately, the amount of the principal works to be tendered for: Earth-works (stiff clay), 4,000,000 cubic meters; cutting in hard limestone rock, 200,000 cubic meters; retaining walls (rough rubble), 5,000 cubic meters; masonry in abutments, 50,000 cubic meters; timber for bridges, 8,000 cubic meters; fourteen stations, with wooden buildings, eleven of which are very small, etc.; weight of rails, 3 kilograms per meter; sleepers, teak or redwood (*mai deng*), 250 by 15 by 20 cubic meters.

The line runs for about 75 kilometers through the low, alluvial plain of the Meinam, on an embankment from 2 to 4 meters high, and is easily accessible by water. From 75 to 136 kilometers the railway is accessible by land and runs nearly level with the ground. From 136 to 180 kilometers the line is only accessible by pack animals (bullocks), and that only during the dry season (December to July).

At 136 kilometers the line enters into valleys, along which it ascends to the table-land of Korat (300 meters above sea-level; summit, 394 meters), with gradients of 15 per *mille* and curves of 180 meters radius, through a splendid forest affording any quantity of wood, which may be cut for the construction free of charge. At 180 kilometers the table-land is ascended, and to Korat the line is again without any difficulties, with easy gradients and curves nearly level with the ground.

As regards the climate, it may be mentioned that in January the temperature in the mountains goes down to 50° F. during the night.

The time of construction is two years from the date of the agreement for the Bangkok-Ayuthia section and four to five years up to Korat.

By order of the minister of public works.

K. BETHGE,
Director-General.

THE INTEROCEANIC RAILWAY.

REPORT BY CONSUL LOUGHERY, OF ACAPULCO.

I inclose you an extract of a letter from Mr. Edmund B. Forbes, chief engineer of the Interoceanic Railroad, which may prove of interest.

R. W. LOUGHERY,
Consul.

UNITED STATES CONSULATE,
Acapulco, November 19, 1890.

CHIEF ENGINEER FORBES TO CONSUL LOUGHERY.

[Inclosure in Consul Loughery's report.]

November 10, 1890.

The Interoceanic Railway has been completed on the eastern side of Mexico as far as Jalapa, the last portion of the line having been opened on the 13th of last July. The works are being pushed forward with great energy to Vera Cruz, and the line will in every probability be opened to this town not later than the first of March of next year.

On the western side the line has been made and opened to Jajutla, a town which stands about 16 miles from Amacusac. It was originally intended to construct a line from Amacusac to Acapulco, but there is very little probability of it being made by this route.

The line to Acapulco, as now projected, will go by Pueblo, Atlixco, Matamoros, Chitla, Chiantlas, Chilpanzingo, Acahutzotla, Egida, and Acapulco. The permanent surveys will be started almost immediately, and the line will in all probability be in full work in the course of next year. The line is now opened as far as Matamoros, Iyucar, and is in course of construction to Chitla, a distance of 106 kilometers from Pueblo. The total distance from Pueblo to Acapulco will be 487 kilometers; Pueblo to Vera Cruz, 338 kilometers. The total interoceanic route will therefore be 825 kilometers, or 515 miles.

EDMUND B. FORBES,
Chief Engineer.

THE MACARONI INDUSTRY OF ITALY.

MACARONI MANUFACTURE.

REPORT BY CONSUL-GENERAL BOURN, OF ROME.

Macaroni is the *semoule* or flour of wheat moistened with water, kneaded until it assumes the requisite consistency, cut or pressed into the desired shape, and thoroughly dried. When wheaten flour is agitated in a large quantity of water, the starchy substances are dissolved, leaving a tough, fibrous mass, which is gluten. Gluten contains nitrogen, while starch does not; hence the *semoule* or flour that contains the most gluten is the most nutritious. As compared with gluten, starch has but little strength; hence macaroni that is rich in gluten is not only the most nutritious, but is stronger, thereby preserving its shape while being dried and cooked.

For the best macaroni, the hard, semi-translucent varieties of wheat grown in warm countries, which contain a large proportion of gluten, are used in the form of *semoule*; for the cheaper grades, common flour is used. Any intermediate grade can be made by mixing the two in various proportions.

There are no statistics which give the quantity of macaroni made in Italy; but, as it constitutes one of the chief articles of food, the quantity must be exceedingly great. There are many large establishments manufacturing it by steam-power, and probably many thousands operated entirely by hand-power and employing from three to five or six hands each. It is also an article of daily household production in a large proportion of Italian families. In the household the appliances are exceedingly simple—a smooth board, a piece of marble for kneading, and a common rolling-pin. One pound of flour is mixed with four or five eggs, moistened with hot water, kneaded a few minutes, and then rolled very thin with the rolling-pin. After drying on the kneading board for some 15 to 20 minutes until the surface loses its adhesiveness, it is rolled up tightly, and thin slices are cut from the ends. The slices, falling apart, constitute strings of macaroni, and are ready for use. It is readily seen that if macaroni be made in so simple a manner there may be many methods of manipulation between the household process and manufacturing with the most approved machinery.

Thousands of small factories are scattered throughout Italy, and are operated entirely by hand. The factory often consists of but one room, aside from the drying rooms, which is at the same time the factory and sales room. The proprietor, with one or two workmen, makes the macaroni, and the wife sells it. The machinery is inexpensive, and the hired labor costs from 30 to 60 cents per day, according to the locality. Artificial heat is seldom employed for drying, but the manufacture is often carried on in connection with the baking business. In this case the drying rooms would be above the ovens and warmed somewhat by the waste heat. The result is that these small establishments can successfully compete with the larger factories that

are operated by steam-power. Their machinery generally consists of a mixer, a kneader, and a press.

The mixer may be described as a semi-circular trough having a hinged cover. Through the trough runs an iron shaft having a number of projecting arms, with a crank on one end. About 100 pounds of *semoule* or flour, or a mixture of both, according to the quality of the macaroni desired to be produced, is placed in wooden troughs that stand in front of the mixer. To this is added a sufficient quantity of water at about 160° F., containing, in solution, a small quantity of saffron to give the macaroni the desired color. It is then mixed by hand for a few minutes, in order to fairly distribute the water, after which it is put into the mixer. The lid being closed, a workman turns the crank for about twenty minutes, when the contents are found to be converted, by the action of the arms attached to the crank shaft, into a stiff dough.

From the mixer the dough is taken to the kneading table. This is made in a number of forms. One of the most common in the vicinity of Rome consists of a kneading plank about 40 inches long, 32 inches wide at the inner end, and 40 inches at the outer end, with sides to keep the dough from falling out. It is solidly made of hard wood $2\frac{1}{2}$ to 3 inches thick, and firmly attached to the floor and wall. The kneading is generally done by two or three men with a long bar attached by a swivel joint to the wall back of the table. This bar is about 16 feet long, 10 inches deep next to the wall, and 3 inches at the other end. The part next to the dough is beveled to the shape of a blunt wedge with a rounded edge. The bar is worked up and down on the dough, and, being fastened at the rear end, exerts a tremendous crushing force. Being made of a tough, elastic wood, it both readily sustains the full weight of the men when pressed down and springs back above the dough sufficiently to allow it to be moved a little and brought down on another portion. This kneading continues for about twenty-five minutes, when the dough is ready for the press.

In some places the table is a straight plank about 8 to 10 feet long and 15 inches wide, with sides to hold the dough in place. The kneading is done by means of a drum, perhaps 4 feet in diameter and the width of the plank. It has cleats fastened to the rolling surface, and is worked forward and back by means of an upright capstan about 12 inches in diameter, with a rope coiled around it and around suitable mechanism on the drum.

As soon as the dough is in a suitable condition it is taken to the press, which consists chiefly of a cylinder perhaps 8 to 10 inches in diameter and 20 to 24 inches long, a plunger that fits accurately the interior, and a die plate that rests on a shoulder cast on the lower portion. The plunger is forced down by a screw, which is suitably connected by gearing with a crank operated by hand.

While one man mixes the dough, another turns the crank to press it, and the third takes the macaroni as it leaves the dies, cuts it into suitable lengths, and hangs it on light cane or bamboo sticks some 5 or 6 feet in length, ready

to be carried to the drying rooms. The press is heated to perhaps 160° F. by means of a small pot of live coals that is placed inside the cylinder a few minutes before pressing begins.

Where a good quality of macaroni is made, extreme neatness is observed in every part of the operation. The mixing troughs, kneading tables, and cylinders are all scraped often. The dies are well washed after use and kept in vessels of clean water.

For each man employed about 175 to 200 pounds of macaroni per day are produced in these factories, and, at the rate of wages previously stated, the total expense for labor would, perhaps, not be over one-fourth to one-third of a cent per pound.

The large establishments are furnished with the most approved modern machinery and are operated by steam-power. Were not wages so low, they would have a great advantage over those operated by hand. They generally buy wheat and prepare *semoule* and flour, not only for their own use, but for the market. In this way they no doubt have advantages that overcome the small expenses of those that are operated by hand.

The largest macaroni factory in Rome is that of Michele Pantanella, in the Piazza dei Cerchi. It has four steam-boilers 7 feet in diameter and one compound engine with a Corliss cut-off and cylinders 26 inches and 45 inches in diameter and 48 inches stroke. The fly-wheel is grooved for sixteen round belts.

The establishment is supplied with modern machinery for the manufacture of *semoule* for macaroni and of flour. The daily consumption is about 600 quintals (60 tons) of wheat, of which about 400 quintals are used for flour and 200 quintals for *semoule*. Italian, Russian, and Indian wheats, according to quality, are used, for in each there are both the hard and the soft varieties. The hard variety is used for *semoule* and the soft for flour. Four different grades of *semoule* are made from the hard wheat, as well as flour. From the soft wheat six different grades of flour are made. Of the wheat named, the Italian grown in Apulia is the hardest and strongest, and, therefore, the best for macaroni. Foreign wheat is never bought for that purpose if Italian can be had. Wheat from Tagenrog is cheaper, is very strong and hard, but is apt to be too dark. Indian grain has a better color, but is weaker than the Russian or Italian. It is considered economical to buy the best and strongest, as good macaroni can not be made from soft or tender wheat.

The rollers for crushing wheat into *semoule* are from the manufactory of Ganz & Co., of Buda-Pesth. For cleaning the wheat, American cleaners made by How & Averill are used. The wheat passes through ten successive pairs of rollers, each pair being grooved smaller than the preceding pair, before it is crushed into the proper degree of fineness for *semoule*. The *semoule* must be hard, strong, granular, and entirely free from dust or flour. When the quality is right, the macaroni made from it can be boiled an hour without losing its shape or becoming soft. The characteristics of Neapolitan macaroni are its strength and its hardness. That made in this establishment

is of the same quality and equal to the best Neapolitan. There is a demand in the vicinity of Rome for nearly the entire production of the mill. It sells readily because it is known that the quality is always the best.

From the floor above two measuring spouts run to each mixer, so that the quantity of *semoule* in each charge is uniformly the same. Hot water having a small quantity of saffron in solution is added, the quantity being accurately measured for each charge.

From the mixer the tough dough is taken to the kneader, where it is well kneaded. The bed of this machine revolves slowly, and the wooden bar above it is worked up and down on the dough with precisely the same effect as is produced by the kneading bar that is worked by hand. It is evident that this machine is but a development of the hand-kneading bar.

In this establishment, as in many others, the dough is still further kneaded by being passed a number of times through a pair of rollers, which are geared so as to automatically reverse their direction as soon as the charge has passed through either way.

The dough is now ready for the presses. These have double cylinders revolving on a central pivot, so that while one cylinder is in position the other is free to be cleansed and charged, ready, in its turn, to be revolved into its place in the press. The presses are operated by hydraulic power, the pressure being 3,600 pounds per square inch.

From the presses the long macaroni is carried on light bamboo sticks to the drying rooms. The small and fancy-shaped are dried on screens. These are wooden frames about 2 by 6 feet, covered with a coarse cloth so as to allow a circulation of air. A brace across the middle of the frame serves as a handle.

The small and fancy-shaped macaroni is made in horizontal presses. Cutters revolving more or less rapidly near the face of the die, according to the length required, cut it into any desired length. The rapidity of the cutters is regulated by a pair of cone pulleys.

The drying of the macaroni is the most difficult and delicate part of the manufacture and depends much on the state of the atmosphere. It is first dried in the open air, whether in the sun or shade depending on the temperature and dryness of the atmosphere, perhaps from half an hour to three hours. The time also depends somewhat on the size of the macaroni. It is then carried to a close, damp room to rest, where it remains, perhaps, twenty-four hours. If the room is not sufficiently damp, it must be kept so by artificial means—by small steam jets or by the evaporation of water. It is sometimes covered with cloths during this stage to prevent too rapid drying. This rest is a retarding process, and is intended to prevent the surface of the macaroni from drying too fast, or as fast as it naturally would, and to allow the interior to harden. If the macaroni is not put to rest at this stage, it is liable to crumble or split. When properly rested, the succeeding stages of drying proceed without difficulty. From the resting rooms it is carried to large, spacious rooms that have thorough ventilation, either natural or artificial.

Below is a price-list per 220.46 pounds of the various products, dated November 1, 1890:

Description.	Including octroi.	Excluding octroi.
Flour :		
No. 0.....	\$9.07	\$8.01
No. 1.....	8.11	7.04
No. 2.....	7.72	6.66
No. 3.....	7.33	6.27
No. 3 D.....	7.04	5.98
No. 4.....	6.85	5.79
No. 5.....	5.11	
Bran.....		2.89
Fine bran.....		2.51
Semoule :		
No. 00.....	10.42	9.36
No. 0.....	10.04	8.97
No. 1.....	9.46	8.40
No. 2.....	8.68	7.62
Flour from hard grain.....	6.95	5.89
Macaroni :		
Finest.....	13.32	12.35
First quality (S).....	12.16	11.19
Second quality (S).....	10.42	9.46
Third quality (S).....	8.30	7.33
Third quality.....	6.37	5.40

These prices do not include the price of the sacks or cases in which the macaroni, flour, *semoule*, etc., is packed. For export macaroni is packed in cases of 11 kilograms (24¼ pounds); for home consumption it is packed in cases of 60 kilograms (132.276 pounds). A charge is made for these cases, which is repaid when the cases are returned, as they generally are.

A kneading machine manufactured in Lyons is capable of kneading from 220 to 660 pounds at each charge. The horizontal bed on which the dough is placed revolves slowly. The large stone which stands vertically also revolves, thus crushing and kneading the dough, which must be continually cut and turned so as to subject every part to the kneading process. Among other machines manufactured in Lyons are: An upright hydraulic press, producing 330 to 440 pounds at each pressing; a horizontal press, producing from 110 to 130 pounds at each pressing; cutters for cutting the macaroni into suitable lengths, and a machine for glazing the small macaroni.

A mixer for mixing the flour and water is manufactured at the Factory and Foundry of St. George's, at St. Gall, Switzerland. The arms attached to the internal shaft do not show. The cover can be raised by a chain having counterpoise weights. To remove the charge, the cover is lifted and the drum of the mixer turned to such a position that the arms throw the dough into a proper receptacle.

The dimensions, capacity, price, etc., of the various sizes are as follows :

Size.	Dimensions.			Driving pulley.		
	Length.	Breadth.	Height.	Revolutions per minute.	Diameter.	Face.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
No. 0.....	5.25	2.95	3.94	150	1.31	0.26
No. 1.....	6.56	3.94	4.59	120	1.71	0.31
No. 2.....	9.84	4.92	5.90	100	2.31	0.46

Size.	Horse-power required.	Net weight.	Capacity per hour.	Price.
		<i>Pounds.</i>	<i>Pounds.</i>	
No. 0.....	0%	822	176 to 220	\$135. 70
No. 1.....	0% to 0%	1,235	330 to 400	193. 00
No. 2.....	0% to 1	3,638	550 to 660	386. 00

A kneading machine manufactured at St. Gall has a surface of hard wood, and the kneading stone has on its surface alternate smooth and serrated bands. It is furnished, when required, for cutting the dough, after it passes under the kneading stone, into three strips and turning two of them on to the central strip. This avoids the cutting and turning by hand, which always involves more or less of danger. It is intended to partly knead the dough in this machine and to complete the operation in the roller kneader, or it can be kneaded in the rollers directly from the mixers. The first takes place when the press cylinders to be charged are of small diameters, and when it is desired to lighten the work of the rollers; the second, when the presses have large cylinders, which can be charged with large pieces of dough.

The dimensions, capacity, prices, etc., of these kneaders are as follows :

Description.	Machine.		Stone.		Driving pulley.		
	Diameter.	Height.	Diameter.	Face.	Revolutions per minute.	Diameter.	Face.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Without stone.....	7.20	9.18	.....	.....	60	2.59	0.36
With stone, in marble.....	.....	.....	4.92	0.98	.....	.....	.....

Description.	Horse-power required.	Net weight.	Capacity per hour.	Price at station in St. Gall.
		<i>Pounds.</i>	<i>Pounds.</i>	
Without stone.....	1	4,188	330 to 440	\$289. 50
With stone, in marble.....	.....	3,306	.....	86. 85
Automatic cutter and turner.....	.....	165	.....	98. 95

A roller kneading machine, or refiner, is worthy of note. This serves to knead the dough from the kneader until it acquires the consistency and homogeneousness needed for the presses. This machine is very solid and entirely of iron. A hand-wheel serves to raise or lower the rolls as required. The rolls are kept clean by means of an apparatus working automatically, and their travel is reversed each time the charge passes through. The builders claim that a greater compactness of the dough can be obtained by using the roller kneaders.

Two machines have a double gearing. The driving gear has wooden teeth to lessen the noise. Another machine is composed of two machines of class 1, having the tables bolted together, the dough passing from one machine to the other.

The dimensions, capacity, price, etc., are as follows:

Description.	Machines.			Rollers.	
	Length.	Width.	Height.	Diameter.	Length.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
No. 1, with cast-iron frames.....	6.23	4.59	5.25	0.80	2.13
No. 2, with cast-iron frames.....	4.92	3.93	4.92	0.69	1.38
No. 3, No. 1 double.....	6.56	9.84	5.25	0.80	2.13
No. 4, with cast-iron frames.....	6.89	4.59	5.25	0.69	1.38
No. 5, with wooden frames below the table..	4.59	3.28	4.59	0.49	1.12

Description.	Driving pulley.			Horse-power required.	Weight of machine.
	Revolutions per minute.	Diameter.	Face.		
		<i>Feet.</i>	<i>Feet.</i>		<i>Pounds.</i>
No. 1, with cast-iron frames.....	200	1.31	0.36	1½ to 2	3,197
No. 2, with cast-iron frames.....	85	1.84	0.33	0¾ to 1	1,764
No. 3, No. 1 double.....	200	1.31	0.36	3 to 4	5,798
No. 4, with cast-iron frames.....				(*)	1,433
No. 5, with wooden frames below the table..				(*)	728

Description.	Capacity per hour.	Price at station in St. Gall.
	<i>Pounds.</i>	
No. 1, with cast-iron frames.....	176 to 198	\$318.45
No. 2, with cast-iron frames.....	88 to 110	250.90
No. 3, No. 1 double.....	353 to 397	617.60
No. 4, with cast-iron frames.....	33 to 44	214.23
No. 5, with wooden frames below the table.....	22 to 26	115.80

* Operated by hand.

Hydraulic presses having one and two cylinders are claimed by the manufacturers to cost less, in proportion to the production, than the screw presses, and that they have many other advantages. They claim that a hydraulic press will produce more than two screw presses of the same dimensions, re-

quires less attention from the workmen, less power to operate, and has almost no parts to get out of order. This establishment produces five different sizes of presses. Nos. 1 and 2 are exclusively used for the production of long macaroni and vermicelli. The cylinders can be revolved on their supports, so that one can be charged while the other is in use. Before the production begins the charge is compacted. The cylinders are heated by steam-jackets. No. 3 is constructed similar to Nos. 1 and 2, except that it is horizontal. It is furnished with cutting apparatus for the manufacture of short and fancy-shaped macaroni. Nos. 4 and 7 can be used for making all the varieties of macaroni, and are furnished with a cutting apparatus that can be detached when not in use. The cylinders are arranged to be heated with either steam or gas. In all the sizes the piston is raised by hydraulic power faster than it descends. By means of a lever a boy can control its ascent and descent, or can stop it at any point. There is also an automatic apparatus that stops the piston at its extreme positions.

The dimensions, capacity, price, etc., of the various sizes are as follows :

Size.	Cylinders.		Horse-power required.	Net weight of machine.	Hourly product.	Cost.
	Number.	Capacity.				
		<i>Pounds.</i>		<i>Pounds.</i>	<i>Pounds.</i>	
No. 1.....	2	154	2½ to 3	17,637	330 to 375	\$1,351.00
No. 2.....	2	55	2 to 2½	11,023	176 to 220	965.00
No. 3.....	2	53	2 to 2½	10,580	176 to 220	965.00
No. 4.....	2	13½	1½ to 2	5,512	136 to 154	1,042.20
No. 5.....	1	13½	7½	3,068	66 to 77	482.30
No. 6.....	1	4½	1 to 2½	2,271	26 to 33	289.50
No. 7.....	1	4½	(*)	1,949	18 to 22	270.20

* Works by hand.

The screw presses built by this concern are entirely of iron, very solid, easy to put in operation, well proportioned, and need simply to be heated either by gas or steam as required. They are supplied with a detachable automatic cutting apparatus for small macaroni. The movements of the piston can be controlled at will, as in the hydraulic presses.

The dimensions, capacity, price, etc., of the various sizes are as follows:

Size.	No. of cylinders.	Weight of press.	Hourly product.	Price at station at St. Gall.
		<i>Pounds.</i>	<i>Pounds.</i>	
No. 1.....	2	4,189	55 to 66	\$482.50
No. 2.....	1	3,527	26 to 33	386.00
No. 3.....	1	3,307	22 to 26	347.40

Various styles of macaroni, vermicelli, etc., are produced by the molds made at this establishment. The dies are made of the best bronze, which, it is claimed, are much superior to copper, as they support greater pressure

and are less liable to injury from accident. They allow a greater space around the openings than the copper, and can therefore be more easily cleaned. The makers therefore claim that they should be preferred to those in copper, even at the increased price.

The prices of the various patterns and sizes are as follows:

Description.	Diameter.			
	0. 295 foot.	0. 384 foot.	0. 656 foot.	0. 984 foot.
Ordinary molds.....	\$5. 79	\$10. 61	\$25. 09	\$19. 39
A, B, C figures.....	10. 61	19. 30	42. 46	.....
The chase, game, and five figures.....	18. 33	38. 60	.....	.....
Vermicelli, etc. (average).....	2. 90	3. 86	7. 72	13. 51
Souvenir pour plaques.....	2. 90	4. 82	9. 65	17. 37

Messrs. Girardi & Bertinelli, of Turin, make a mixer which is constructed entirely of iron. In this apparatus, as in the others of a similar construction, it is simply necessary to place the proper quantity of *semoule* and water in the drum, close the cover, and start the machine. In from seven to ten minutes the charge is sufficiently moistened to be removed to the kneaders. By means of the crank and attachment the drum can be revolved into such a position that the contents are thrown into a proper receptacle when the cover is opened.

The capacity of the various sizes per charge is as follows: No. 1, 330 pounds; No. 2, 220 pounds; No. 3, 88 pounds.

A kneading machine with three cones, made by the same firm, is claimed by them to be much superior to the old styles, both in the quality of the macaroni produced and in the economy of labor. They say that one man with this kneader can prepare 330 pounds of dough for the press in less than twenty-five minutes, and can supply two hydraulic presses having cylinders with a capacity of 330 pounds at each charge. Mr. Maglia Antonio, a large macaroni manufacturer in St. Michael, Savoy, has, besides several screw presses and kneaders with two cones, one of this pattern and two hydraulic presses, each with a capacity of 330 pounds, and one mixer of the same capacity. These last-mentioned machines, operated by only three workmen, produce, on an average, 5,280 pounds daily, and under favorable circumstances as much as 6,600 pounds of the very best quality of macaroni, which has received premiums at numerous exhibitions. The machine is very solidly constructed, not liable to get out of order, and not dangerous to operate. It is furnished with apparatus for automatically cutting and turning the dough. The kneading table is 6.6 feet in diameter. The entire machine weighs 7,050 pounds.

They also make double and single screw-presses. The one weighs about 3,750 pounds, and has a capacity of 77 pounds at each charge. With a capacity of 110 pounds, it weighs 4,450 pounds; the other is constructed with capacities of 66, 77, 88, or 110 pounds. The time occupied for press-

ing each charge is from fifty to seventy minutes. This style can be arranged to be operated by power or by hand. If the cylinder has a capacity of $48\frac{1}{2}$ pounds, it can be furnished with a cutting apparatus for making the fancy-shaped macaroni. With cylinders of from 66 to 88 pounds capacity the press weighs 2,870 pounds, and with a capacity of 110 pounds it weighs about 3,350 pounds.

Another machine represents a hydraulic press with its pump. The capacity is 330 pounds, and the time required for a pressing about sixty-five to eighty minutes. With but one man to attend it, there can be produced eight pressings, or about 2,640 pounds daily. The pressure required is about 250 atmospheres. The piston is raised by hydraulic power and is stopped automatically at its extreme points. The weight is about 12,550 pounds.

Another is a horizontal screw-press. It is built in two sizes. No. 1 has a capacity of 44 pounds, and weighs 1,984 pounds. No. 2 has a capacity of 31 pounds, and weighs 1,896 pounds. The time required for a pressing is thirty-five to forty minutes.

Through the kindness of Messrs. Luciano and Campo, of Turin, manufacturers of the most approved macaroni machinery, I have been furnished with drawings of the machinery and estimates of cost for establishments capable of making, respectively, 10, 15, and 20 tons of macaroni daily. These estimates are based on the supposition that the macaroni is to be equal to the best Neapolitan, and that the daily production of the long and assorted kinds shall bear about the same relative proportion to each other as is customary in Naples and in the large manufactory of Mr. Michele Pantanella, at Rome.

Messrs. Luciano and Campo have also furnished me with a plan of an establishment designed by them at Foggia, and which is furnished with their machinery, capable of producing daily 10 tons of macaroni. There is also a bakery operated in connection with the manufacture of macaroni. The main building is 197 feet long and $52\frac{1}{2}$ feet wide. It has additions at either end and courts. The macaroni machinery is on the ground-floor and occupies most of it. The remainder serves for placing the long macaroni on canes and the short on frames, preparatory to being removed to the drying terraces and courts, which are in part covered and in part exposed to the air. After reaching there, the first stage of drying, the long macaroni is put to rest, which consists in softening it again to give it that character and establish that capillary state that only Neapolitans have found out and applied in the drying. By this, with the good quality of the *semoule* employed, they have rendered it so famous. After this operation the drying is completed in the various large rooms on the floors above the machinery. From 15 to 20 horse-power are required in this establishment.

Messrs. Luciano & Campo are prepared to furnish plans and estimates for establishments and machinery capable of producing any given amount of macaroni. They send a competent mechanic to set up and start the machinery, charging for his services \$2.89 $\frac{1}{2}$ per day, besides his board and

railway fares. The terms of payment are one-third with the order, one-third on delivery, and one-third three months thereafter. For the machinery to produce 10 tons per day about eighteen weeks after the receipt of the order and the first installment are required; for 15 tons, about twenty weeks; and for 20 tons, about twenty-two weeks.

Estimates for machinery for producing 10 tons daily.

Description.	Weight of each.	Cost of each.	Total cost.
	<i>Pounds.</i>		
2 boilers with steam currents for heating the water used.....		\$106.15	\$212.30
2 mixing machines for previous moistening of the <i>semoule</i>	1,984	206.51	413.02
2 kneading machines with rollers for refining the dough.....	5,732	476.71	953.42
4 kneading machines with bars.....	5,291	405.30	1,621.20
4 presses with oscillating cylinders for long macaroni.....	14,109	1,138.70	4,554.80
2 presses with oscillating cylinders for the same, but thinner.....	7,937	617.60	1,235.20
2 presses for small assorted macaroni, with automatic cutters.....	9,921	868.50	1,737.00
2 press cutters.....		111.94	223.88
1 centrifugal ventilator.....		77.20	77.20
Total.....			11,028.02

Estimates for machinery for producing 20 tons daily.

Description.	Weight of each.	Cost of each.	Total cost.
	<i>Pounds.</i>		
3 boilers with steam current for heating the water used.....		\$106.15	\$318.45
4 mixing machines for previous moistening of the <i>semoule</i>	1,984	206.51	826.04
4 kneading machines with rollers.....	5,732	476.71	1,906.84
6 kneading machines with bars.....	5,291	405.30	2,431.80
6 presses for long macaroni.....	14,109	1,138.70	6,832.20
4 presses for long, thin macaroni.....	7,937	617.60	2,470.40
4 presses for small assorted macaroni, with automatic cutters.....	9,921	868.50	3,474.00
3 press cutters.....		111.94	335.82
1 centrifugal ventilator.....		96.50	96.50
Total.....			18,692.05

Estimates for machinery for producing 15 tons daily.

Description.	Weight of each.	Cost of each.	Total cost.
	<i>Pounds.</i>		
2 boilers with steam currents for heating the water used.....		\$106.15	\$212.30
2 mixing machines for moistening the <i>semoule</i>	1,984	206.51	619.53
2 kneading machines with rollers.....	5,732	476.71	953.42
6 kneading machines with bars.....	5,291	405.30	2,431.80
5 presses with oscillating cylinders for long macaroni.....	14,109	1,138.70	5,693.50
4 presses with oscillating cylinders for long, thin macaroni.....	7,937	617.60	2,470.40
3 presses for small assorted macaroni, with automatic cutters.....	9,921	868.50	2,605.80
2 press cutters.....		111.94	223.84
1 centrifugal ventilator.....		77.20	77.20
Total.....			15,287.53

The exports of macaroni from Italy for the year 1890 have been as follows:

Whither exported.	Quantity.	Whither exported.	Quantity.
	<i>Quintals.</i>		<i>Quintals.</i>
Austria-Hungary	1,842	Egypt.....	171
Belgium.....	32	Tunis and Tripoli.....	210
France.....	571	Algeria.....	106
Germany.....	130	United States and Canada.....	1,376
Great Britain.....	290	Argentine Republic.....	684
Greece.....	41	Uruguay.....	47
Holland.....	31	Other countries.....	552
Switzerland.....	556		
European Turkey.....	59	Total.....	*6,730
English Asiatic possessions.....	32		

* Equal to 673 tons of 2,204.6 pounds; value of the same, \$63,645.61.

AUGUSTUS O. BOURN,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Rome, December 27, 1890.

MACARONI INDUSTRY OF CASTELAMARE.

REPORT BY COMMERCIAL AGENT WOOD.

The two principal places of production are Torre dell' Annunziata and Gragnano.

Torre dell' Annunziata, a commercial town of 21,000 inhabitants, carries on a large trade in corn, flour, and macaroni, producing about 20,000 tons of the latter per annum—10,000 tons for consumption and a like amount for exportation. The wheat from which the macaroni is made comes from the Black Sea, and costs 25 lire per 100 kilograms, or \$4.83 per 220 pounds.

Gragnano has a population of 13,800, and produces about the same amount as Torre dell' Annunziata; it is made from hard Italian wheat.

Macaroni is made in factories and in houses of the makers. The labor employed is mostly hand labor, and the rate of wages per day for skilled and unskilled labor averages 60 cents.

It is exported principally to New York, New Orleans, London, Alexandria (Egypt), and Constantinople.

The greatest amount goes to New York. The amount exported to the United States from this district for the year ending June 30, 1890, was 261,880 boxes, containing 6,547,000 pounds, and amounting to \$321,479.50.

A. M. WOOD,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Castelamare, August 7, 1890.

THE MACARONI INDUSTRY IN GENOA.

REPORT BY CONSUL FLETCHER.

KIND OF WHEAT USED.

Russian and Bombay wheat is almost exclusively used in the manufacture of macaroni.

COST OF WHEAT IN FACTORY.

The cost, duty included, is: For Russian, 23 to 24 francs per 100 kilograms; for Bombay grain, 22 to 23 francs per 100 kilograms.

NUMBER OF FACTORIES.

There are about fifty macaroni factories in this consular district. Very little is manufactured outside, and none whatever for export.

NUMBER EMPLOYED, AND WAGES PER DAY PER HEAD.

There are about fourteen hundred people constantly employed in the manufacture of macaroni. The wages paid each laborer averages 70 cents per day.

HOW MANUFACTURED, AND THE COST PER 100 KILOGRAMS.

The process of manufacturing macaroni is a simple one. The wheat is cracked—not ground to flour—and the husk removed. The broken kernels are then placed in a special receptacle and a certain quantity of water poured thereon. No other ingredient enters into the article, except, occasionally, a little saffron to give color to certain brands.* When properly saturated—fifty minutes being usually allowed for this purpose—the soft mass is run through certain machinery, that all the kernels may be crushed, after which it is pressed through different kinds of molds, either by steam or water power, with the result that it comes out therefrom in the many forms of macaroni offered for sale. All shapes, fine or coarse, in pipes or flat, or in any other form, go under one name in Genoa, to wit, “paste.” The cost of production is \$1.15 per 100 kilograms.

TIME CONSUMED IN DRYING OR CURING MACARONI.

Granted favorable weather, macaroni can be dried and ready for the market or for packing in ten days; if damp weather, fifteen days.

HOME CONSUMPTION.

At a moderate estimate about 10,000 kilograms, or about 22,040 pounds, of macaroni are consumed in this consular district daily.

EXPORTATION.

Macaroni is packed in wooden boxes, each box holding from 8 to 11 kilograms. Half-boxes are also made and filled to order. During the

* Saffron is mixed in all macaroni shipped to Brazil.

year ended June 30, 1890, there were shipped to the United States from Genoa 342,795 kilograms of macaroni at a cost of 12 cents per kilogram. In round numbers, then, the United States paid the Genoese \$41,135.43 for paste during the year ended June 30 last. Brazil purchases about 6,000 cases per month; the Plate country, about 800 cases per month; England, about 250,000 kilograms per annum, of a very fine quality. Granted that each box or case sent to Brazil and to the countries along the Plate contains 10 kilograms, the annual exportation of macaroni, then, from this consular district sums up as follows:

	Kilograms.
To South America.....	816,000
To the United States (annual average).....	342,795
To England.....	250,000
Total.....	1,408,795

AMOUNT MANUFACTURED PER ANNUM.

In order to find out the amount of macaroni manufactured in this district annually, it is only necessary to multiply the number of kilograms consumed daily (as given elsewhere) by the number of days in the year, then to the product add the amount exported:

	Kilograms.
Daily consumption 10,000 kilograms \times 365.....	3,650,000
Amount exported.....	1,408,795
Total.....	*5,058,795

PRICES PAID FOR MACARONI.

The prices paid for macaroni are as follows: For home consumption, about 11 cents per kilogram; shipped to the United States, about 12 cents per kilogram; shipped to Brazil, about 16 cents per kilogram; shipped to England, about 14 cents per kilogram. These prices include cost of boxes and delivery on board ship.

DUTY AND REBATE.

The Government and municipal duty on wheat amounts to 5 francs per 100 kilograms. For every 100 kilograms of macaroni exported the shipper thereof has 5 francs returned to him.

COST OF MACHINERY.

The machinery in the different macaroni factories here varies in prices; some cost \$5,000 and some as high as \$8,000.†

* Equal to 11,149,584 pounds.

† I regret that I can not send drawings of the machinery used. On previous occasions I have procured such for parties interested in the macaroni industry in the United States; but the firm of E. Cravero & Co., extensive workers in iron and wood at Foce, near Genoa, seems weary of granting my frequent requests, and will not reply to my last demand.

IMPORTANT NOTE—AMERICAN WHEAT.

Mr. F. Ravano, of Quinto, a village about 5 miles from Genoa, has just informed me that he uses American wheat extensively in the manufacture of macaroni for home consumption.

JAMES FLETCHER,
Consul.

UNITED STATES CONSULATE,
Genoa, July 23, 1890.

MACARONI IN LEGHORN.

REPORT BY CONSUL RICE.

Macaroni and other similar alimentary pastes are manufactured from hard wheat obtained from Russia and India. The cost, delivered here, is from \$4 to \$5 per 224 pounds, including duty.

The manufacture is exclusively carried on in private factories, of which there are twenty-seven in Leghorn, all driven by steam-power and producing daily about 24,000 pounds of macaroni.

The total number of workmen employed is, as near as can be ascertained, three hundred and thirty, and their pay varies from 40 to 80 cents per diem.

There is very little exportation of the article from Leghorn, the quantity manufactured here being consumed in this neighborhood. The Italian Government returns the duty paid on wheat for all pastes exported.

The process of manufacturing macaroni pastes is as follows: In the first place, the grain is ground not too finely; it is then mixed with water in the proportion of 16 pounds of water to every 30 pounds of flour; it is then transferred to a marble receptacle with a wheel of the same material revolving within it, which reduces the paste into dough in the space of one hour, when it is ready to be placed in the machines, where it is immediately turned into the different pastes as desired. It is then placed upon canvas to dry, which usually occupies from eight to ten days, to allow its becoming thoroughly hard.

I inclose herewith a pamphlet showing one hundred and twenty-nine varieties of macaroni manufactured here and two drawings of machinery used for making the smaller varieties of pastes, as well as the long ones, which can be cut into any lengths desired.*

WILLIAM S. RICE,
Consul.

UNITED STATES CONSULATE,
Leghorn, September 4, 1890.

* Inclosures not considered necessary for publication.

MACARONI MANUFACTURE.

REPORT BY CONSULAR AGENT VERDERAME, OF LICATA.

The manufacture of macaroni, which may be regarded as the chief industry in south Italy and Sicily, gives a livelihood to a great class of laborers, and it is in fair progress all over the Kingdom.

It is impossible to state exactly the quantity of this food consumed in Italy and exported abroad, because it is far too difficult to make the precise statistics on the production.

Should any statistics be obtained from the authorities, I would reckon the same as not very reliable, for two simple reasons, viz, the quantity exported can never be precisely valued, because captains of vessels leaving for the United States, France, Austria, etc., take on board, for their own account, large quantities of macaroni, which are declared at the custom-house for ships' use, but in reality are intended for sale abroad.

The amount of the house consumption is still more difficult to be ascertained, for the simple reason that not only the smallest country places, but even many private families, provide themselves daily with this article for their own consumption.

I am not far from the mark in stating that the consumption of macaroni in Sicily is to be rated at half a pound per head daily.

This staple food is cheap and wholesome, and, as it can be cooked in many fashions, it is largely consumed by the poorest, as well as by the richest, families.

The quantity going abroad is also very great, the use of macaroni becoming every day more generalized along the Mediterranean coast, in South America, and wherever there are Italians.

The Italian Government, with the aim of helping this industry, refunds to the manufacturers three-fourths of the duty collected on the foreign grain consumed in making the macaroni exported, and, nevertheless, I have heard many complaints about the decreasing export to the United States, where Italian manufacturers are rapidly losing ground on account of the home production.

Macaroni making requires neither great means nor great skill, and this has rendered the industry so generalized throughout Italy.

The largest quantity is produced by hand-presses, which, by the work of two men—one for working the wheel and the other for cutting the macaroni—can give a production of about 150 kilograms every twelve hours and a profit of 3 to 5 francs.

But macaroni thus made is generally of inferior quality and intended for sale after a few hours still in a moist state. Such presses are often planted in the house of the manufacturer, composed of a single room on first floor, which is generally used as bedroom, factory, and shop. The good quality of macaroni for export trade depends totally on the water and

the flour used, and principally upon skillfully curing it. Water containing calcareous substances must be avoided; the purest water is good, but when it contains a little carbonate it is still better.

The flour must be of very clean, hard wheat.

The mode of manufacture in use is to knead the flour thoroughly with a little water (in summer fresh and in winter a little hot) until it is reduced to a tough paste; then, without loss of time—for in hot climates the paste soon turns sour—it is pressed slowly through the holes of the frame into macaroni, which, when about 1 yard in length, is cut out and put hanging by the middle on reeds and exposed to the open air.

In this state they are sold by the small factories for prompt consumption.

In order to obtain a good quality of macaroni for export purposes, viz, fit to keep fresh for a long period, great skill and time ought to be employed, as they require to be thoroughly cured (dried up). This work can be done in the large factories only, which are provided with sufficient means for keeping the production in store ten to thirty days, according to the weather.

After having been exposed to the open air as above stated, the macaroni is taken back to a moist room, called hot-house, from which the air is carefully excluded, and kept there until the dampness has rendered the macaroni tube entirely straight again. They are afterwards removed to other rooms, and are more or less ventilated, according to wind, moisture, heat, etc., until totally dry.

Licata, with a population of 20,000 inhabitants, has eighteen hand-presses which work exclusively for the town consumption and a large factory working for export purposes.

This factory, owned by Messrs. Michel Verderame & Co., is provided with the latest gearings and improvements, and, as all the work is done by steam-power, a great deal of hand-labor is economized. The daily production, amounting to 15 to 20 cwts. of excellent macaroni, is no longer sufficient to satisfy the great demand from all the Sicilian cities, and the owners intend to enlarge their works. This factory is provided with skillful laborers, to whom no fixed salary is assigned, but by contract they are paid at the rate of 2 francs per 100 kilograms of macaroni produced. The foreman employed for drying the macaroni is paid extra, receiving a salary of 5 francs per day.

The price of the flour, free of expenses on railway track, is 31 francs per bag of 100 kilograms, and, the macaroni being sold at 37 francs per 100 kilograms, there is a difference of 6 francs, from which deduct 2 to 3 francs for expenses, and there remains still a handsome profit.

It is proper to state that many consumers like to have the macaroni of a yellowish color, which ought to be given by mixing in the water a little saffron; but, this being too expensive, generally the crome-yellow (called macaroni color) is used.

ARTHUR VERDERAME,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Licata, August 26, 1890.

MACARONI IN MARSALA.

REPORT BY ACTING CONSULAR AGENT STEELE.

In this district macaroni is made entirely for local consumption, and is made from the best wheat flour. Female labor is employed to a great extent for handling the flour, and men do the heavy work of pressing the paste through the different-sized holes to form the strings, which are then hung up on canes to dry before sale. The women receive from 15 to 20 cents per day and the men from 35 to 45 cents.

The macaroni is generally made in a room adjoining the shop where it is sold. It would be impossible to form an idea of the quantity made annually, especially as many families make their own macaroni at home. Besides the native-grown wheat, they use that imported here direct by sea from Malta and Tunis and a good deal comes from Trapani by rail, to which place it is imported from Black Sea ports. During the last year 1,493 quarters of wheat, valued at \$13,860, were imported by sea from Malta and Tunis; of this quantity, six-sevenths came from Malta, and would, no doubt, be of Russian origin, and one-seventh from Tunis. The quantity received from Trapani can not be arrived at.

During 1889 no macaroni was exported from here by sea, and none has been sent to the United States since August 1888, when 200 kilograms were exported, valued at \$24.23.

THOMAS STEELE,
Acting Consular Agent.

UNITED STATES CONSULAR AGENCY,
Marsala, June 26, 1890.

MACARONI INDUSTRY OF MESSINA.

REPORT BY CONSUL JONES.

In Messina several varieties of wheat are used in the manufacture of macaroni, viz: Sicilian wheat, quoted at from 23.50 to 24 francs per 100 kilograms; Timilia wheat, quoted at from 22.50 to 23 francs per 100 kilograms; and imported varieties, Bombay and Taganrog, quoted at 22.50 francs per 100 kilograms. All wheat from the Black Sea goes by the name of "Taganrog." The best wheat is the Francesca, or Sicilian, wheat. It is very hard, and the harder the wheat the greater the quantity of "semola" (the fine, hard parts of wheat rounded by attrition in the mill) and the better the quality of macaroni. It contains 20 per cent. of nitrogenous matter, and does not suffer from the spring droughts. It was largely exported to France prior to the abrogation of the treaty of commerce between that country and Italy in 1888. The mode of manufacture is as follows: One hundred kilograms of semola and 15 kilograms of water are worked into a dough and passed through perforated plates of different patterns.

There is one steam macaroni factory in Messina (capacity, 60 quintals per twelve hours). In this establishment, after the wheat has been washed, ground, and sifted, the semola is put in an iron vat and stirred, as the water is added, by thin iron fingers attached to an axis that runs through the vat, which revolves by steam-power. The dough is then placed on a round iron table that revolves slowly under two stationary plated iron rollers (truncated ones) that revolve on their own axes, which knead the dough. The diameter of the bases of the two cones is, respectively, 6 and 12 inches. The dough is next placed in iron cylinders, and, by a piston worked slowly by a screw, is made to pass through perforated bronze disks and shaped into different forms and patterns according to the perforations in the disks. In making up the dough tepid water is used in summer, slightly warm water in winter. The macaroni, as it is taken from the press, is hung up to dry in well-ventilated rooms for two days, if for home consumption, and two weeks, if for exportation. This factory employs girls at 10 cents a day to hang up the macaroni to dry.

When macaroni is made by hand (steam factories are exceptions), the dough is kneaded with a long wooden lever (a 6-inch wedge-shaped scantling 10 feet long), which three or four men alternately raise and bring down with force on the dough as they describe a half-circle, thus preventing the lever from falling twice on the same place. The screw of the pressing piston is run down either by a gearing worked by a lever or by a gearing worked by a large wooden tread-wheel that revolves under the weight of active twelve-year-old boys.

A certain amount of machinery being indispensable in the manufacture of macaroni, the makers never undertake to make it in their small, overcrowded rooms. Some families, however, make "pasta di casa" with wheat flour, but for home consumption only. When wheat is washed, it absorbs an amount of water equal to one-eighth of its weight. No yeast is used in making up the dough. The cost, of making macaroni by hand is twice as great as by steam. Men get from 40 to 50 cents a day for their work; girls, from 10 to 12 cents.

No macaroni is exported from this district to the United States. Last year 300 kilograms of macaroni were shipped from Messina to Egypt. In Messina macaroni is worth 45 francs per 100 kilograms (4 cents a pound).

It is impossible to state, even approximately, the amount of macaroni consumed in Messina, smuggling in semola being extensively carried on to avoid the octroi duty.

WALLACE S. JONES,
Consul.

UNITED STATES CONSULATE,
Messina, February 22, 1890.

NAPLES MACARONI INDUSTRY.

REPORT BY CONSUL TWELLS.

The raw material which enters into the manufacture of macaroni is hard wheat, which contains a large percentage of gluten, and is imported into Italy principally from Odessa and Taganrog. Italian wheat is also used, but is more expensive. Imported wheat costs from 24 to 26 lire per quintal.

The wheat is first ground into a coarse meal, from which the bran is removed; the wheat in that state is called "semola," and heat and humidity are necessarily employed during the grinding to ensure a good semola.

The semola is mixed with boiling water and worked into a dough, requiring twenty-five minutes, if worked by hand, and fifteen minutes, if worked by machinery, which nearly all of the manufacturers use at present. The dough is then forced through gauges, with or without mandrels, to give it the proper shape.

When the macaroni is cut to the required length, it is hung on rods and placed in the sun or wind for from two to four hours, according to the season. Then it is placed in damp cellars for twenty-four hours and finally for one day in the sun to dry, after which it is put in paper and packed in boxes. Macaroni is made in factories along the coast of the Bay of Naples, at Sorrento, Gragnano, Amalfi, and other places in the vicinity.

Every factory employs from ten to twenty men at a cost of 1.50 to 2 lire per day for each man. A machine, called the "impastratrice," is used by the principal manufacturers. It was invented by Pietro Albano, who has an iron foundry in the neighborhood of Naples. With it the dough can be worked in fifteen minutes, employing one man at 1.50 lire per day, which work, if done by hand, would require four men and twenty-five minutes to accomplish it.

Two-thirds of the macaroni manufactured is consumed at home, and the balance is exported to the United States, England, Holland, Switzerland, and other parts of the world. One-half of all that is exported, however, goes to the United States.

The total quantity of macaroni exported from this consular district amounted, for the first six months of the year 1889, to 2,238,044 kilograms, valued at \$223,804.

JOHN STEEL TWELLS,

Consul.

UNITED STATES CONSULATE,

Naples, August 11, 1890.

THE MACARONI INDUSTRY OF PALERMO.

REPORT BY CONSUL CARROLL.

THE RAW MATERIAL.

The raw material (so-called) entering into the manufacture of macaroni is "semola," or semolino, that is, "the fine, hard parts of the wheat, rounded by attrition in the millstones," which ensue after the elimination of the farina and bran from the grain ground with that view. The most indurated or hardest grain to be found is used in the manufacture of macaroni, especially when intended for exportation.

The wheat production of Sicily being inadequate to the demand for home and export consumption, large quantities thereof are purchased from continental Italy, Greece, Russia, Tunis, Turkey, the English colonies, etc. The semola, or semolino, derived from the native and foreign wheat are mixed, and from this mixture macaroni is manufactured.

With a view of obtaining the semolino, the wheat, as hinted above, is ground in mills operated by steam or water power, the price of semolino varying according to its quality and the daily market value of wheat, which fluctuates from time to time, depending on the demand therefor and the quantity in the various markets referred to.

The best Sicilian wheat is known as "Realforte," the first grade of which, while fluctuating as stated, costs 23.29 lire per 100 kilograms, and the second quality thereof 22.51 lire per 100 kilograms. The next Sicilian wheat, as to quality, is known as "Sammartinara," of which there are also two grades, the first costing 22.90 lire and the second 22.51 lire, per 100 kilograms.

The average price of semola, or semolino, is 41.50 lire first quality and 40 lire second quality, per 100 kilograms.

MODE OF MANUFACTURE.

Before describing the modes of manufacture, it is thought proper to repeat that semola is the only so-called raw material used in the manufacture of fine, first-class macaroni. When other ingredients are used, the macaroni is of the second or third grade.

The first process in the manufacture of macaroni is to place the semola in a kneading trough lined with iron, together with sufficient water for kneading purposes. In the process a large millstone, with a double rotatory movement and vertical axis and a diameter of about 2 meters and a height of about 50 centimeters, is used. This millstone is propelled by two men, while another person, generally of some intelligence, known as the "governatore," or governor, stands near the kneading trough to "govern" or place the paste properly under the millstone, as occasion requires, to the right or left.

The paste thus prepared is placed in a vertical iron cylinder containing a piston, which is operated by the two men referred to above by means of a

hollow screw, the governatore occupying a place at the exit of the macaroni, in order to cut each string the proper length as it passes out, as well as to place the same on canes or long, thin beams or poles arranged horizontally with a view to its drying. At the bottom of the cylinder is a brass plate containing numerous apertures, large or small, depending on the size of the macaroni desired, through which the paste in the form of macaroni emerges by means of piston pressure, until all the paste has been pressed out.

In order to facilitate the egress of macaroni through the apertures adverted to, the interior of the cylinder is lubricated with olive oil, while the extremity of the cylinder near the point of exit is heated.

Macaroni is of various lengths, some liking it long, others medium, and others short or no longer than half an inch; so it is with the forms of macaroni, which are almost innumerable.

The various lengths and forms are obtained, as explained in the foregoing paragraph, through the peculiar apertures in the plate which may be used.

Palermo abounds with small macaroni factories, and in these the majority of macaroni is made. It is also made at the houses of certain numerous persons by women; but, when thus made, its early consumption is indicated.

LABOR EMPLOYED AND COST.

Six hours are consumed in making 100 kilograms of macaroni, three persons being necessary to accomplish this in the time named, at a cost of 8 lire. The average quantity of macaroni made by each factory is from 100 to 200 kilograms daily. At some factories no more than 50 kilograms are made, while others make 250 and 300 kilograms per day. This depends upon circumstances—the capacity of the factory, its location (those centrally located or near the market having the advantage), and the demand.

In small factories three persons are sufficient; in large factories six persons and two boys are employed, who are divided into reliefs.

CONSUMPTION AND EXPORT.

The amount of macaroni consumed at Palermo is about 50,000 kilograms per day. Macaroni is not manufactured here for exportation, but simply for local consumption, the amount manufactured not being sufficient therefor. The necessary quantity is purchased at Naples and Termini-Imerese, the latter place exporting through this port considerable to the United States and other countries, as will be seen from the comparative statement herewith.

There is one dentated millstone in each factory, through which the semola is made into paste. There are also two cylinders or macaroni machines, known in Sicily as "abitrio," one of which is placed vertically and the other horizontally, the former producing large, thin, or long macaroni and the latter short or cut macaroni, known, respectively, as "pasta lunga" and "pasta tagliata." The vertical machine is operated by men and the horizontal by boys.

Table showing the quantity of macaroni exported from the port of Palermo to certain countries during the five years beginning January 1, 1885, and ended December 31, 1889.

Whither exported.	1885.	1886.	1887.	1888.	1889.	Total.
	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>
Austria.....	755	1,330	2,178	2,356	1,500	8,119
Australia.....		1,440				1,440
England.....	5,648		16,164	11,508	9,430	42,750
France.....	564	664	725		1,800	3,753
Germany.....	395	1,650	451	910	1,200	4,606
Greece.....		680				680
Holland.....	732		910			1,642
Russia.....				20,720		20,720
Spain.....	150					150
Tunis.....	930	630				1,560
Turkey.....	30					30
United States.....	211,985	188,606	193,167	293,730	115,852	1,003,340
Total.....	227,189	195,000	213,595	329,224	129,782	1,088,790

The average annual export was 217,758 kilograms, and the average annual export to the United States was 200,668 kilograms.

Table showing the quantity of macaroni exported from Italy during the twelve years beginning January 1, 1878, and ended December 31, 1889, respectively.

Year.	Quantity.	Year.	Quantity.
	<i>Kilograms.</i>		<i>Kilograms.</i>
1878.....	5,430,000	1885.....	5,867,600
1879.....	5,580,200	1886.....	4,167,900
1880.....	6,789,700	1887.....	1,744,400
1881.....	6,501,200	1888.....	1,081,900
1882.....	7,096,400	1889.....	642,700
1883.....	7,132,400	Total.....	57,740,700
1884.....	5,706,300		

The average annual export was 4,811,725 kilograms. The falling off in 1887, 1888, and 1889 is attributed to strained relations with France.

PHILIP CARROLL,

UNITED STATES CONSULATE,

Consul.

Palermo, August 28, 1890.

MACARONI IN TRAPANI.

REPORT BY ACTING CONSULAR AGENT MARRONE.

The macaroni industry is little known in the northern provinces of Italy, while very extensive in the southern regions, particularly in Naples and Sicily.

Macaroni is a wholesome and nutritious food. The raw material which is used in its manufacture is corn flour, obtained at present in our market at the price of 38 lire per 100 kilograms for the first quality. The mode of manufacture is the following: Wheat is first ground by steam or wind mills, of which we have many in Trapani, many of the steam-mills being very important, particularly that of Messrs. Aula & Co., which is considered one of

the first in Italy. Grinding wheat, etc., is one of the principal industries of this town. The flour is obtained, then kneaded with salt-water, after which the paste is pressed. There are different systems of manufacturing macaroni; some is made by steam-press, some by hand, and different forms are given to it. That made by hand is accomplished in the houses of the makers, the other in factories.

The number of men employed at Trapani in the macaroni industry is considered to be about five hundred. The cost of labor is 2.55 lire per day per man. The amount daily consumed in this town is nearly 7,000 kilograms.

The amount exported can not be stated, for the reason that the greater part of macaroni is sent by rail to the principal ports of Italy, as Genoa, Palermo, Naples, etc., and there exported by speculators to foreign markets. The annual exports directly from Trapani to the United States is insignificant. During this year only 8,320 kilograms have been exported thereto.

IGNAZIO MARRONE,

Acting Consular Agent.

UNITED STATES CONSULAR AGENCY,

Trapani, July 2, 1890.

MACARONI INDUSTRY OF LYONS, FRANCE.

REPORT BY CONSUL FAIRFIELD.

As to the material used in the manufacture of macaroni, the wheat is obtained from Algeria, Russia, Tunis, Tripoli, and India. The last is superior to any of the rest. The price paid for the wheat ranges from 22 to 25 francs per 100 kilograms.

The manufacture is entirely in factories. The number of employés is from 1,000 to 1,200. The heavy work is done by men; the drying, packing, weighing, marking, etc., by women. The men are paid from 4 to 5 francs a day; the women, 2 to 3 francs.

The value of the exports to the United States in 1890 was \$120,000. This I learn from the records of the consulate. As to the amounts exported to other countries, I have not been able to find any thing reliable. The total value of the production is estimated by the chamber of commerce of this city at about \$1,600,000. The same authority estimates that one-fourth of this is exported. If this is a correct estimate, nearly one-third of all that is sent out of France is sent to the United States.

This city is the chief center of the manufacture in France. Those engaged in the manufacture have declined repeated solicitations to give me any information relative thereto, and, as there is no report made to the public authorities, it has been impossible to obtain as exact information as I would be glad to furnish. I presume, however, that the estimates made by the chamber of commerce are not far astray.

EDMUND B. FAIRFIELD,

UNITED STATES CONSULATE,

Consul.

Lyons, December 2, 1890.

COMMERCE AND INDUSTRIES OF SWEDEN.

REPORT BY MINISTER THOMAS, OF STOCKHOLM.

I have the honor to submit the following report on the population, products, industries, and trade of Sweden, together with Sweden's trade with the United States and the opportunity for a line of direct American steamers:

POPULATION.

The population of Sweden is almost exclusively of pure Scandinavian stock. Probably no other civilized country is inhabited by so unmixed a race. True, there are settled in the Kingdom 19,000 Finns, 6,400 Lapps, and some 3,000 Jews; but these and what few others there may be of foreign blood, all put together, form only a little more than one-half of 1 per cent. of the people.

Notwithstanding a cold climate, hard soil, and large emigration, the population of the country steadily increases. On December 31, 1800, Sweden numbered 2,347,303 inhabitants; on December 31, 1889, the population had increased to 4,774,409, having more than doubled during the eighty-nine years of the present century.

During the last twenty-five years Swedish emigration, chiefly to the United States, has been very large. American statistics show that in the decade 1880-'89 Sweden contributed to the United States over 400,000 of her people, nearly 1 per cent. a year; yet, during the same ten years, she increased, in round numbers, 200,000 souls. And this total of 600,000 for the decade just ended is all the natural increase of the race, for the total immigration from all the outside world into Sweden is small and does not equal the emigration out of it to countries other than the United States.

The number of Swedes dwelling in the country, on farms and in villages, is comparatively very great. At the close of 1889 there were 3,890,667 people living in the country and only 883,742, or about 18½ per cent. of the entire population, dwelling in all the cities. Of late years, however, the cities are growing at the expense of the country, and the desire for city life that seems to have taken possession of all other nations is slowly making itself felt even in good, old-fashioned Sweden. There are but two large cities in the Kingdom, and these stand head and shoulders above all others—Stockholm, with a population of 243,500, and Gothenberg, with 102,782, according to the census of 1889. No other city possesses 50,000 inhabitants.

There is a noteworthy preponderance of females in Sweden. The statistics of 1889 show 143,669 more females than males, or, in other words, for every 1,000 of the male sex there are to be found 1,062 of the female sex. And this disproportion was even greater in former times. In the year 1750, the earliest year for which such statistics are given, there were 1,124 females to every 1,000 males, a greater disparity than can be found in the records of

any other land. The Swedes attribute this state of things to the continued foreign wars waged by Sweden during the seventeenth and the earlier portion of the eighteenth centuries, in which the gallant little Kingdom gained great glory, but lost the flower of her sons. During the last quarter of a century emigration has also contributed to keep up this inequality of the sexes, since for every 842 females there are 1,000 males, on the average, among the Swedish emigrants.

PHYSICAL FEATURES OF THE COUNTRY.

Of the 170,700 geographical square miles which form the total area of Sweden, no less than 15,000 square miles (one-twelfth) of the surface of the country are covered with lakes. Four of these—Venern, Vettern, Mælär, and Hjelmaren—are great inland seas, navigated by an extensive commerce. The largest, Lake Venern, is the third in Europe and covers 2,150 square miles.

Sweden is not only a land of lakes; it is pre-eminently a land of forest. The entire surface of the country, exclusive of lakes, is, in round numbers, 156,700 square miles in extent. Of this, no less than 69,500 square miles are covered with woods, giving a forest area equal to over 44 per cent. of the entire dry land surface.

An additional area of 68,000 square miles, or nearly 44 per cent. more, is not susceptible of cultivation, consisting of *ffjeld*, rock, extensive morasses, fens, and swamps. Thus nearly 88 per cent. of the dry land of Sweden is to-day forest, *ffjeld*, or fen. Indeed, exact statistics show that only 8 per cent. of the vast forest-covered, rock-bound surface of Sweden has been brought under cultivation.

AGRICULTURE.

Bearing in mind this fact and one other—that the entire country is so far north that all farming is impossible within the same parallels on the Atlantic coast of America—it is surely astonishing to learn that the great, dominating pursuit of the Swedes is agriculture. Not only this, but the agricultural products of Sweden are sufficient for the support of her own people, and, furthermore, leave a surplus for export in ordinary years.

The grain and pod crops of Sweden for the year 1890 are alone estimated to be worth no less than \$76,400,000 and the potato crop at \$15,400,000 additional, giving a total of nearly \$92,000,000; and it should be stated that this potato crop is much below the average, being valued at \$5,400,000 less than that of 1889.

More than half the land seeded with grain is given up to oats, and that cereal now forms more than one-half in bulk of the grain crop. Rye and barley are next in importance, and only a comparatively small amount of wheat is raised. Although only about one-fifth of the crop, rye is yet the chief staple for food. The Swedes, however, find it more advantageous to raise oats. This they export in large quantities, chiefly to England, and import rye, principally from Russia, profiting by the exchange. The aver-

age yearly export of oats for the last five years was, in round numbers, 200,000 tons and the import of rye 150,000 tons.

In like manner Sweden makes an exchange for her own benefit in the article of pork, sending her young swine to the English market, where they command a high price, and importing the more nourishing American pork, chiefly sides, in large quantities and at much cheaper rates.

In the olden time the Kingdom always produced sufficient cereals for her own people. The great wars of conquest, however, which Sweden carried on for generations so drained the country of tillers of the soil that about the year 1650 Sweden became a grain-importing country. This condition continued for one hundred and seventy years, or down to 1820, when Sweden again raised sufficient for her own consumption. In 1840, with more attention paid to farming and the application of improved methods, the Kingdom began to produce a surplus for export. Sweden then continued a grain-exporting land till 1880, a period of forty years; but since that year the statistics show a surplus of imports over exports in the grain trade.

This, however, does not prove a shrinkage in agricultural products; the reverse is, in fact, the case; it simply tends to show the change that has taken place in farming. The Swedes of late years have turned their attention more to dairying and to raising cattle and horses, for which branches of agriculture Sweden is peculiarly adapted from the excellent quality of grass in her fields and pastures.

In 1889 Sweden exported butter to the value of nearly \$7,500,000, live animals—chiefly cattle, horses, sheep, and swine—worth \$2,600,000, pork worth \$1,200,000, besides beef, eggs, and cheese valued at \$160,000 additional, making a total export of nearly \$11,500,000 in animals and their products. So that although Sweden is to-day, and seems likely to continue to be, a grain-importing country, yet, taking the products of agriculture as a whole, she raises sufficient for her own people and has a surplus for export.

Besides the products of agriculture, Sweden exported in 1889 fish (fresh and salt) to the value of \$4,500,000. Although Sweden has put only 8 per cent. of her territory under the plow, as we have seen, yet this small percentage, reduced to acres, gives us a very respectable figure.

Sweden possesses 8,027,000 acres of cultivated land. In addition to this, the country is exceptionally rich in natural meadows, the total area of which is estimated at not less than 4,329,000 acres, or 4.3 per cent. of the entire land surface.

But over and above all else is this vital fact, that nature, as if to compensate for the hard soil and arctic position of the Scandinavian peninsula, has granted it a climate softer and milder than she has given to any other northern land and rendered agriculture possible up to, and even far beyond, the Arctic Circle.

On the west, or Norwegian, coast of the peninsula, where the effects of the Gulf-stream are most felt, rye ripens up to 69° north latitude and both barley and oats up to 70°. In those high latitudes it has been noticed that

barley is ready for the sickle in ninety days after sowing, the exact time required in the south of France. Doubtless the continuous light, night as well as day, helps to ripen the grain, and it is also said to give it a greater percentage of starch.

Small farms are the rule in Sweden, and the Swedish peasant generally owns the soil he tills. This ownership naturally begets contentment, and is largely the reason why such a vast majority of the population are still satisfied with a country life and that Sweden is still fortunate in the possession of "an honest yeomanry—its country's pride."

Of the entire arable land of Sweden, more than 66 per cent. is divided into farms whose cultivated area is between 5 and 50 acres each and more than 23 per cent. into little homesteads where the farmer tills less than 5 acres. The number of farms where between 50 and 250 acres are put under the plow comprises only about 9 per cent., and great estates of more than 250 acres of tillage less than 1 per cent., of the cultivated area of the Kingdom.

LUMBER.

Next after agriculture the two great products of Sweden are wood and iron. These are her two chief exports as well, and it is with wood and iron that Sweden chiefly purchases whatever she needs or wishes of the necessities and luxuries of the great world beyond the *ffjords*.

And surely a nation may be accounted fortunate that possesses an abundance of these two great staples. They will always be in demand, for they are two of the prime necessities of civilized life. Of these two grand exports, wood ranks easily first.

The vast Swedish Norrland and the great central portion of the country, also, are still covered for the most part with a great black forest, consisting largely of pine and spruce.

The general trend of the Scandinavian peninsula, as it stretches away toward the pole, is north-northeast. The lofty *ffjeld* plateau, which lies along the boundary between Sweden and Norway, and which is happily called "Kölen" (the keel)—the maritime Scandinavians likening their country to a boat turned bottom up—has the same north-northeast direction.

From this high *ffjeld*, and often not far from, though high above, the Atlantic Ocean, rise numerous rivers, which, flowing in a southeasterly course down the gradual incline of the peninsula and at right angles with its longest axis, broadening frequently into long lakes, which once were *ffjords* of the sea, and anon plunging in fosses down the rocky barriers between, at last fall into the Gulf of Bothnia.

Among these rivers are the Torneá, Kalix, Luloá, Piteá, Skelleftea, Umea, Angerman, Indals, Ljusne, Ljungan, and Dal-Elf. They all lie to the north of Stockholm, nearly all in Norrland.

Upon this enormous water-shed stand the chief timber forests. Along all these rivers and many smaller ones and their tributaries are carried on extensive lumbering operations.

Every fall the Swedish lumbermen go into the woods, just as our lumbermen do in Maine, Michigan, or Minnesota. They fell the trees, haul the logs to the banks of the river or brook all winter long, and in the spring drive the logs down the streams to the mills near the gulf. At the mouth of most rivers is a town, which usually takes its name, as it does its business and prosperity, from the river. Here are large saw-mills, with both steam and water power—some of them built of stone, brick, and iron—equal in both buildings and machinery to any lumber mills in the world. Here the logs are sawed principally into deals, battens, and boards, which are piled up in vast squares that almost conceal the town as you approach from seaward.

And here is a lively commerce summer and fall all along the Bothnian gulf. Ships, both steam and sail, lie thickly along the quays, taking on board the lumber, which they carry away to England (where it competes largely with lumber from our Northern States and Canada), to France, Denmark, Germany, Holland, Belgium, Portugal, and also to Brazil, Cape of Good Hope, and remote Australia. Thirty years ago many a stately American ship, clipper built and lofty sparred, sailed up the Baltic and took part in this trade; but our flag has disappeared from the Baltic now. May the time not be distant when it shall wave again both here and on every sea!

South of Stockholm lumber operations are conducted on both the east and west coast, and there is a noteworthy export from Gothenburg, most of which comes from the grand Klar-Elf, which flows into Lake Venern. But the great bulk of lumber is cut and sawed in Norrland and 85 per cent. of Sweden's lumber export comes from north of her capital city.

The vast Bothnian lumbering district extends from the head of the gulf down to the port of Gefle. This city lies north of the sixtieth parallel, and a glance at the map will show that 85 per cent. of Swedish lumber is cut and shipped from places north of the latitude of Cape Farewell, Greenland.

(The lumber trade has been pursued upon the Scandinavian peninsula for centuries. Timber was exported from Sweden during the reign of Gustavus Vasa, at least as early as 1546, and Milton speaks of "the tallest pine hewn on Norwegian hills to be the mast of some great ammiral."

In 1659 the far-seeing Swedish Chancellor Oxenstiern called the Swedish forests "the most precious gems of the realm."

(But it is only within the present century, and, in fact, within the last thirty years, that the Swedish timber trade has assumed any thing like its present importance. Strangely enough, there are no statistics of the timber product of Sweden, except for the Crown forests. Statistics of the lumber exported, however, are easily obtained, and these show that this trade has reached colossal proportions.

The average export of unmanufactured lumber from Sweden for the years 1881-'85 reached the magnificent sum of \$25,864,000 annually and formed about 40 per cent. in value of the total exports of the Kingdom.

Sweden's lumber export consists chiefly of sawed stuff, four-fifths being deals, battens, and boards. The remainder is principally squared timber,

usually hewn; spruce logs, used for piling in Holland; yards and booms in England, and masts of fishing craft in Scotland and France; and pit props (short small logs 3 to 7 inches in diameter and 3 to 9 feet long), used for propping up the rock strata of coal mines in England.

Sweden also exports manufactures of wood to an annual value of about \$4,500,000.

The production of wood pulp has increased very rapidly in Sweden of late years. It is made chiefly from spruce, and that manufactured by the sulphate process is highly esteemed and meets with a ready sale. The greater proportion of the wood pulp is consumed at home; yet in 1885 16,000 tons were exported and in 1889 the export had increased to more than 52,000 tons. The greater part goes to England, Denmark, and the United States.

Swedish lumber is of excellent quality. The trees, growing so far north, increase but a trifle each year. The annual rings are consequently very narrow and compact, and this gives the wood a very fine grain; but this very fact also renders it a long process for the Swedish forests, when once cut over, to reproduce themselves.

The Crown forests.—How long the present rate of cutting can continue is a question of grave importance, not only to Sweden, but to the countries to which she sends her lumber, and also to the United States and Canada, whose own lumber meets in the Swedish product its greatest competitor in the markets of the world. The opinion very generally obtains that the amount of lumber now cut largely exceeds the growth of the forests and must at no distant day result in a diminishing annual harvest of Sweden's greatest export.

In forming this opinion, however, I think there is one important factor that has not been sufficiently taken into consideration—the Crown forests.

More than one-quarter of the entire wooded area of Sweden, or 14,300,000 acres, belongs to the Crown. This is valued at \$13,588,000, nearly \$1 an acre, and in 1888 yielded a net income of \$335,000.

These royal timber preserves are managed with scrupulous care. All Sweden is divided into forest districts, and these in turn into *revir*. Each district is under the supervision of a chief forest inspector, and each *revir* is guarded by a forest ranger and a number of under-keepers.

These not only keep strict watch against trespassers, but even as the royal officers of England ranged the Maine woods prior to our revolution and marked with the "broad arrow" the lofty pines that should be cut as masts for the navies of old England, so now the Swedish keepers go through the Swedish Crown woods and mark every tree they deem ripe for the ax; and these trees thus marked, and only these, are permitted to be felled.

The Crown forests are managed, in fact, on the principle that the increase alone may be cut, and that the forest itself—the capital stock, so to speak—shall stand forever on all Crown lands unsuitable for cultivation. Furthermore, the Government has entered upon an extensive and practical system of planting forests upon desolate and uncultivated areas.

These excellent official measures have also had a marked effect upon the owners of the private forests, especially upon the larger proprietors, many of whom are now managing their timber lands as permanent sources of income.

It is my judgment, therefore, that the vast forests of Sweden will be preserved and maintained substantially as they stand to-day, and that Sweden's lumber export—her greatest source of income—will be kept up and kept good throughout an indefinite future.

IRON.

The second grand export of Sweden is iron. Swedish iron is celebrated the world over; no better has ever been produced. It is soft, ductile, and tough and possesses great pliability and textile strength. For centuries Swedish iron has furnished the civilized world with the raw material for the best tools and weapons, the most elastic springs, the finest drawn wire, and the most pliant nails for riveting and clinching.

Thirty years ago it was said there was not a horseshoe nail driven in the United States that was not made of Swedish iron. The saying was true at the time, though to-day the discovery of better ores in America and the application of improved methods of smelting have enabled us to replace to some extent the Swedish iron with our own.

It is wonderful how the cold Swedish iron can be bent and coiled and twisted without breaking. I think every one who visited our great world's exposition at Philadelphia in 1876 will recollect, not only the Swedish school-house and the life-like groups of statuary representing Swedish peasants, but also the tall stands of Swedish iron bars, and how they were twisted and tied in bow-knots and bent into serpent's coils and contorted into every conceivable shape without a break appearing. I have heard of a Swedish steam-ship that in the fog ran full speed into an upright rock cliff. The bow was turned round and round into a spiral by the shock, but not a plate of Swedish iron was broken or cracked; the ship recoiled without a leak, and went on her way rejoicing.

The excellence of the Swedish iron depends partly upon the fineness of the ore, most of it being free from both phosphorus and sulphur, and partly upon the superior manner of smelting. All Swedish iron is smelted with charcoal, which is comparatively cheap, as the forests grow upon the iron beds.

The supply of iron ore in Sweden is practically inexhaustible. It is found all over the country. It not only occurs in thick strata in the rock, but forms a large part of the bulk of great mountains in various portions of the Kingdom.

The largest of these iron mountains is Gellivare, situated in the Swedish Lapland beyond the Arctic Circle. The ore occurs here chiefly in four gigantic strata and covers so large an area that it is estimated that if only 1 meter (3.28 feet) in depth is taken out a year the yield would be 943,600 tons, nearly equal to the amount now produced by all the mines in Sweden.

This Gellivare ore is also very rich, containing no less than 70 per cent. of iron. Much of it, however, contains apatite, and in such large quantities that the question of turning to account the phosphoric acid held in this mineral is seriously entertained.

A railroad has just been built and is being put in running order from Lules, near the head of the Gulf of Bothnia, to the iron deposits of Gellivare. The distance from the gulf to the mountain by rail is 190 kilometers, and it is anticipated that large shipments of ore will soon take place both to England and Germany.

At the present time iron is chiefly mined in central Sweden, 87 per cent. of the ore being broken in the four provinces of Örebro, Kopparberg, Vestmanland, and Vermland, which lie together, forming one compact area just north of the four great Swedish lakes. The best iron of all, however, is found a little to the eastward of this area. It comes from the celebrated Dannemora mines, in the adjoining province of Upsala, where the old Walloon refining process is still exclusively employed and is tenaciously adhered to, chiefly as a guaranty to the buyer that the iron really is from Dannemora.

The number of iron mines in Sweden is extraordinary. In 1889 no less than three hundred and ninety-three were worked, employing 6,278 laborers and producing 983,609 tons of ore. Most of the ore was smelted within the Kingdom, the small amount of 118,573 tons only having been exported.

The same year there were one hundred and fifty blast-furnaces in operation. Here the ore was smelted, producing 416,043 tons of pig-iron, together with 4,622 tons of castings, which were run directly from the furnaces.

From these pigs were refined 226,000 tons of blooms and 136,000 tons of iron and steel ingots, the latter by either the Bessemer or Martin process.

From these blooms and ingots, in turn, there were hammered out or rolled 275,000 tons of bar-iron; 2,000 tons of steel were also manufactured by the old methods, and there were produced, in addition, 74,000 tons of plates, nails, rails, and other articles. A small amount was exported without further refining.

In the various iron-works of the country there were employed in 1889 no less than 23,051 laborers.

Of bar-iron alone there was exported in the same year over 200,000 tons, while the value of unmanufactured metals—almost exclusively iron—exported from Sweden at the present time reaches, in round numbers, \$9,000,000 annually.

Manufactures of iron.—Sweden is not content with manufacturing the rougher forms of iron alone. She builds excellent iron steam-ships of the finest quality. There are several iron ship-building works in different parts of the Kingdom, but the largest is located at Motala, on the Gota Canal. These works have also a branch at Lindholmen, in Gothenberg.

Nearly all the steam-boats plying on Swedish waters are built within the Kingdom, and Sweden also sells steam-ships to other countries, notably to Russia, Finland, Germany, and South America.

The Swedes excel chiefly in building ships of medium and small size, and I think nowhere in the world are produced such light, graceful, swift, and serviceable steam launches as are turned out in Sweden and you see plying everywhere round about Stockholm, Gothenberg, and other Swedish cities.

The Swedes have also become very skillful in the manufacture of cutlery. The town of Eskilstuna, lying not far from the western end of Mælär lake, is now widely known—and deservedly, too—as “the Sheffield of Sweden.” Here are situated a dozen or more factories, which turn out the finest cutlery and tools. Eskilstuna razors, penknives, and scissors are well known and highly prized in almost every country of the globe.

And I must not forget the “separator,” an invention of Dr. de Laval, of Stockholm, for separating cream from milk. This machine has, in truth, revolutionized dairying. Separators are manufactured in Stockholm and exported to the ends of the earth.

MISCELLANEOUS MANUFACTURES.

Among the many other manufactures of Sweden, I think, none are more famous than her matches. The export of Swedish matches in some years reaches 15,000 tons, and they are liberally distributed broadcast over the whole world.

Of the remaining exports of Sweden, may be mentioned paper and the manufactures thereof, tar, granite for building purposes, paving stones, calfskins, and the hides of reindeer.

FOREIGN COMMERCE.

The exports for the year 1889 were valued, in round numbers, at \$81,000,000, the imports for the same year amounting to \$101,000,000, giving a total trade of \$182,000,000, with an apparent adverse balance of \$20,000,000.

The imports of Sweden consist chiefly of grain (largely rye, wheat, and maize), cotton and cotton goods, spirits, wines, herring, hides and skins, coffee, machines, mineral oils (petroleum), sugar, coal, tobacco, wool, and woolen goods.

Nearly one-half of the exports of Sweden go to Great Britain, the bulk of the remaining half to France, Denmark, Germany, Belgium, Holland, Norway, Spain, and Finland, these countries standing in relative importance in the order named. The direct export to other countries is comparatively small. But Great Britain does not consume all of the products she receives from Sweden. A great portion is transshipped and forwarded to other nations. England thus stands as a middle-man, or distributor of Swedish goods, and no doubt understands well how to make a judicious profit out of the situation.

SWEDISH COMMERCE WITH THE UNITED STATES.

To Americans the trade of Sweden with the United States will no doubt be the most interesting chapter of Swedish commerce. This trade has been

for many years of respectable proportions, but it is a difficult matter to obtain any definite information of its volume or value.

The American statistics, to which I have had access, give the total of our imports and exports to Sweden and Norway together in the lump, and it is, of course, impossible to distinguish Sweden's part therein. Furthermore, our statistics do not embrace one-third part of the American products which annually are imported into the Scandinavian peninsula.

The Swedish official statistics give but two articles of any importance as exported from Sweden to the United States—iron and wood pulp—and the total value of these exports in 1889 is estimated at only \$348,000. Of course, it is evident to any one at all familiar with the Swedish-American trade that these figures represent but a portion of Sweden's exports to the United States. The explanation is that the Swedish statistics credit to each foreign country those goods, and only those, that are exported directly to that country. Thus, if a steamer sail from Sweden to England, all goods on board are accounted for in the statistics as exports to England, when, perhaps, the ultimate destination of a large part of the cargo may be the United States or some other land.

The same is true of imports. If a ship arrive in a Swedish port from Germany, for instance, all the cargo discharged is written down as imported from Germany, although it may consist in large part of cotton, pork, or sole-leather from the United States.

The Swedish statistics of the American trade, therefore, embrace only those goods passing between the two countries in ships sailing directly from one to the other. But the great bulk of the merchandise exchanged between us is shipped on steamers of established lines that sail to England, Germany, or Denmark, where it is transhipped *in transitu*; and it is these countries, and not the United States, that are credited with by far the greater part of our trade. There is, fortunately, one way of obtaining accurate data upon Sweden's exports to the United States, and that is from the invoices sworn to before American consuls in Sweden, for these invoices embrace all goods sent from Sweden to the United States, indirectly as well as directly, where the value of the shipment exceeds \$100. By the politeness of our consuls I have been furnished with this data, which I have endeavored to compile into readable form.

The great dominating export of Sweden to the United States is iron. This one great staple forms now, as it has for many years, three-fourths in value of Sweden's entire export to our country. While the Swedish statistics give the export of iron to the United States for 1889 at only 4,521 tons, worth \$131,000, the returns from the American consuls show that Sweden actually sent us no less than 64,389 tons in that year; that is to say, for every ton of iron shipped directly there were 13 tons forwarded us via other countries.

These 64,389 tons of iron were valued in Sweden at \$2,142,472, and consisted chiefly of bar and rod iron, rivet wire, nail rods, and steel castings, with smaller quantities of pig-iron, blooms, and ingots.

As a purchaser of Swedish iron, the United States stands second only to Great Britain, and, as for all other powers, we take more than three times the amount of any of them.

In the same year (1889) Sweden also shipped to the United States 8,046 tons of wood pulp, worth \$284,061. This is used in making paper, and, of course, competes with the product of our own forests in our own markets.

We, furthermore, bought of Sweden \$85,277 worth of her matches for our smokers; separators to the value of \$20,618 for our dairies, besides \$22,683 worth of other machinery; keen cutting knives and razors to the value of more than \$7,000, calf-skins worth \$6,000, and filtering paper worth \$2,000. We also received from Sweden more than \$10,000 worth of Swedish books. These all find their way to our Swedish fellow-citizens, who still cherish a love for fatherland, its language and literature.

Besides this, Sweden sent us smaller quantities of porcelain and silver spoons for our tables, leather jackets for our sportsmen, herring and anchovies for Swedish *smörgåsborden* in the New World, and Swedish punch, whisky, and porter for our Scandinavian immigrants.

The total export of Sweden to the United States for the year 1889, as gleaned from the consular records, was valued at \$2,787,000. This sum is eight times greater than that given in the Swedish statistics, and proves that only one-eighth part of the goods Sweden sends us comes in ships that sail directly from Sweden, while seven-eighths of the entire Swedish export to the United States are transshipped en route in foreign ports.

And even the consular figures do not give us the whole truth, for we must add to them all goods sent in shipments of less than \$100 each, all books and merchandise sent by mail, as well as the vast amount of clothing, bedding, utensils, and other goods carried into America by forty thousand Swedish immigrants.

But it is of still greater importance for Americans to know what Sweden imports from the United States. Taking the same year (1889), we find the Swedish statistics give the total value of this import at \$1,582,115. But Sweden's import from our country of either one of the three staples—cotton, petroleum, or sole-leather—was alone greater than this total, so much larger is the indirect than the direct trade.

Sweden's importation of petroleum brings up an interesting question. When I first visited Sweden, more than twenty-five years ago, there was scarcely a farmer's or fisherman's cottage in the land that was not lighted, when the nights were dark, with American petroleum. Since then the Russian mineral oil has been introduced into the country and has entered into active competition with the American.

Now, if there is any country in Europe where the Russian oil could successfully compete with ours, it would seem to be Sweden, which lies alongside Russia, but is separated from the United States by the North Sea and the Atlantic Ocean. The Swedish market is worth striving for, too, for in no

civilized country are the winter nights longer and the need of artificial illumination greater than in Sweden and Norway.

It is especially gratifying, therefore, to learn that to-day, after years of rivalry, the Russian oil has made so little inroad that at least 94 per cent. of the petroleum consumed in Sweden is the product of our country.

Large quantities of American pork, wheat, and maize are also imported into Sweden.

American pork has, in fact, become a necessity. It is in almost universal use among the Swedish laboring classes. They prefer it to the hog product of any other country, their own not excepted, and will not consent to any substitute.

Throughout the vast Norrland forests in every lumber camp American pork is as indispensable an article of diet as it is in Maine or Michigan.

Take a trip on any steam-boat in Sweden. Look down from the bridge upon the deck passengers. At noon time you will see many a one lift up the lid of his wooden chest, take out a chunk of white American pork, cut off a liberal slice, lay it carefully on a disk of dark, hard rye bread, and on this, and this alone, make his frugal meal, washing it down, perhaps, with a pint of light beer.

And Sweden's imports from America are not confined to the great staples. Any American who walks the streets of the Swedish cities and looks in at the shop windows, who mingles with the people, goes to their homes, and sees what they eat, drink, wear, and use, will be convinced that Sweden imports a great variety of American goods that are not credited to America in any published statistics.

I sent out one day for a lock for my door. "The best lock you can find," I told the messenger; and he obeyed my injunction to the letter, for he came back with a Yale lock made in Connecticut.

At every stationer's you find our handy Eagle lead-pencils.

There is no town of importance in Sweden where canned lobsters packed by the Portland Packing Company are not sold, and its Red Star brand is often seen upon the Swedish *smörgåsborden*. A Stockholm merchant informed me that his firm imported canned lobsters from this one company to a value of more than \$20,000 in a single year.

American canned corned beef is to be had everywhere in Sweden, and you will find in all grocery stores in the cities a good assortment of American canned fruits and vegetables, notably peaches, pears, apricots, cherries, plums, corn, and tomatoes.

Considerable quantities of preserved fruits and vegetables are consumed in Sweden. Most of them, however, are imported from France, and are higher priced than our own. A little push and pains would secure a largely increased market for this class of American goods in Scandinavia.

You sometimes come upon American canned chicken, turkey, oysters, and prawns, and I must not forget American honey and desiccated apples and the high esteem in which they are held in Sweden.

Our corn-starch, or maizena, is a special favorite with the Swedes, and the same can be said of our breakfast cracked oats and hominy.

There is an increasing importation of American flour into Sweden, and you may see loads of it carted through the streets to the bakers. It is contained in large brown bags that hold as much as a barrel, and is usually stamped "Minneapolis."

Early in the "eighties" there was a large importation of American apples. Our red-cheeked Baldwins were preferred, and "Amerikanska äpplen" was printed on all the bills of fare at hotels and restaurants. I was pleased to see our American Baldwins again in the Stockholm markets in the fall of 1890.

There was once a considerable sale in Sweden for our sewing and agricultural machines, but the Swedes have learned to manufacture such articles themselves and to control their home market.

Twenty-five years ago in many of the Swedish farmers' houses I entered I found hanging on the wall an American clock, frequently embellished with an engraving of George Washington. At present round nickel-plated clocks with an alarm on top may be seen standing in rows in the shop windows, and are sold everywhere throughout the country.

And, last of all, I must not forget the thousand and one little articles of daily need and use that come under the prolific head of "Yankee notions." For all such there is a good demand and ready sale in Sweden.

In getting at the amount of Sweden's actual imports from the United States I was greatly assisted by Dr. Hjalmar Gullberg, actuary of the royal central statistical bureau. With the help of the statistics of the bureau, and also those available in the Royal Kommerce Kollegium, we have sorted out and separated the American goods imported into Sweden via other countries as accurately as possible and added these to Sweden's direct import from the United States.

Of course, these figures are not, and from the nature of things can not be, exact; but I believe they are approximately correct, and I am quite sure they are the only ones ever made public giving any adequate idea of the volume of our trade with Sweden.

According to our computation Sweden imported in 1889 the following amounts of our goods:

Articles.	Value.	Articles.	Value.
Cotton.....	\$1,794,647	Maize.....	\$231,441
Petroleum.....	1,720,253	Clocks and parts thereof.....	74,998
Sole-leather.....	1,246,867	Other articles, chiefly those heretofore enumerated.....	1,998,968
Pork.....	751,430	Total.....	8,055,468
Wheat.....	237,764		

This total, it will be seen, is five times greater than the Swedish official figures, showing that four-fifths of Sweden's imports from the United States are through foreign ports.

It is also three times larger than our total export to both Sweden and Norway, according to American statistics, which would seem to show that the United States, like Sweden, takes into account only the direct export to each foreign land.

Here, then, we have a grand commerce where Sweden's imports from the United States amount, in round numbers, to \$8,000,000 and her exports to \$3,000,000 a year.

This gives a total Swedish-American trade of \$11,000,000 annually, one, too, which is greatly to our advantage, for our sales are three times the amount of our purchases.

A LINE OF DIRECT AMERICAN STEAM-SHIPS.

Such is our trade to-day—a good showing, certainly, for our commercial relations with this little country so far away up toward the North Pole.

But our trade is not what it ought to be, not what it might easily be made to be, for it lacks one grand factor—direct steam communication. Let us glance for a moment at the channels of trade and travel now existing between the two countries.

The traveler from the United States to Sweden usually takes one of the great transatlantic steamers to Liverpool; thence a few hours by rail carries him across country to Hull, on the east coast of England; embarking here, a voyage of two days takes him on over the stormy North Sea, past the windy Skaw, on the northern sandy point of Denmark, and into the port of Gothenberg, Sweden. One may leave the United States by the German or Belgian steamers, and, landing at Antwerp, Bremen, or Hamburg, keep on by rail or boat to Copenhagen, whence a steamer will ferry him across the sound to Malmo, Sweden, in less than two hours.

Some ten years ago the Danish Thingvalla Steam-ship Company was founded. The steamers of this line ply once a fortnight between Copenhagen and New York, so that we may also sail from America to Copenhagen direct, and then, changing steamer, cross the ferry to Sweden.

The great bulk of traffic between Sweden and the United States passes over the first of these routes, that is, from Gothenberg over the North Sea to Hull, thence across England by rail to Liverpool, and then on to America by an Atlantic steam-ship; in fact, five-sixths of the Swedish emigrants take this route.

Now, these are all good lines, and each one of them has its peculiar advantages; but they all have this one great disadvantage in common, that all goods taken by them from the United States to Sweden must be discharged and reloaded at a foreign port *in transitu*, with all the delay, breakages, damages, agencies, leakages, "eatages," custom-house supervision, and annoyances which such transshipment is sure to occasion. Of course, the same is equally true of goods sent from Sweden to America; and, furthermore, all passengers and emigrants from either country to the other, together with their baggage, must be likewise transshipped.

Yet, in spite of all these hindrances and inconveniences, the Swedish-American commerce has attained the goodly proportions we have enumerated—proportions amply sufficient, it seems to me, to justify starting a line of direct steam-ships between the two countries.

The subject is not new. It has been agitated in Sweden, to my personal knowledge, ever since 1863, and the experiment has been several times tried. It was first attempted in 1884. Two lines of steamers were started in the spring of that year from Sweden to the United States, one sailing from Gothenberg, the other from Stockholm, and touching at Malmo and Gothenberg. Subsequently another line was started from Stettin via Gothenberg to New York, and other direct steamers have plied intermittently. But these lines have one and all, after a brief struggle, ceased to exist, not so much from want of patronage as because the rich and powerful transatlantic companies, in combination with the lines from Sweden to England and Germany, have either crowded out or bought up the new companies.

To-day there is no line of direct steamers between Sweden and America, yet \$8,000,000 worth of American goods are transported from the United States to Sweden annually. And as for return cargoes, let us look a moment at only two of the exports of Sweden. Immigrants and iron—yes, blood and iron, in very truth—Sweden sends to us, and in what magnificent amounts! Forty thousand sons and daughters of her people and 64,000 tons of her iron a year. Divide them among a fortnightly line of steamers, and you have more than fifteen hundred immigrants and nearly 2,500 tons of iron for every ship. Is not this trade, or any considerable portion thereof, a prize worth striving for? And how admirably these two exports are adapted to and complement each other. The iron ballasts the immigrant ship; the immigrants enjoy the great space the heavy iron leaves vacant.

The attempts for direct ships have hitherto all been made from the European end of the route. Americans are now on the alert to increase the foreign market for our goods. We have determined, also, to restore our flag to its old time supremacy on the seas.

At this opportune moment I desire to call earnest attention to the subject of a direct line of American steamers from our country to Sweden. A grand commerce already existing invites our ships, and they will develop and increase this commerce to the benefit of both Sweden and the United States.

W. W. THOMAS, JR.,

Minister.

UNITED STATES LEGATION,

Stockholm, January 1, 1891.

AUSTRALASIAN-CANADIAN MAIL COMMUNICATION.

REPORT BY CONSUL GRIFFIN, OF SYDNEY.

I have the honor to inform the Department that the friends of the Government of the Canadian Dominion in these colonies have been very active for several months past in pushing the efforts of the Canadian Pacific Railway Company to secure a subsidy for a monthly or fortnightly mail service between Vancouver's Island, B. C., and these colonies. It is thought that several Canadian officials will be here shortly in the interest of the said service. A cablegram from London, under date of the 18th instant, states that a subsidy of £165,000 has been granted by Canada towards the proposed mail service, and that it is believed Great Britain has consented to give £50,000, and that the colonies will be asked to give £35,000. A cablegram has also been published here to the effect that the Marquis of Hartington will introduce to the Marquis of Salisbury a deputation of the agents-general for Australasia to join in a subsidy for the new line. The newspapers of the colonies, with one or two exceptions, are silent about the matter. It seems, however, from the tone of the journals that have touched upon the subject at all, that there is little sympathy among the great body of the people for the movement, and I am of opinion that the proposition is likely to encounter opposition, although the amount asked for is very small when compared with what they have been in the habit of paying for carrying their mails.

It is said by the friends of the Canadian railway that the proposed steamship line will be the means of bringing about a large trade between Canada and Australia. Now, the truth is, there are very few things in Canada that the Australian people want or that they could not get cheaper and better in the United States; and, in regard to the export trade from these colonies to Canada, that, I think, is wholly out of the question, at least for many years to come. The population of Canada is too small to create a demand for wool or any other raw product of Australia.

All things considered, the proposed undertaking seems more like a menace to the interests of the United States than any thing else. It should be remembered that the trade with the United States is rapidly and steadily increasing, and bids fair, in the near future, to swell to large proportions, and particularly if any thing like reciprocity could be established between the two countries.

It will be seen from the elaborate tables I prepared on this subject, printed in CONSULAR REPORTS No. 118, that, small as the trade is, it is much larger than that of any other country, with the exception of Great Britain, and, leaving the latter out, nearly as large as that of all other countries combined. In the remarks accompanying the tables I have endeavored to point out the exact condition of the trade and the obstacles that stand in the way

of its further development. The report, together with others that I have prepared from time to time, show how anxious the colonies are to trade with us and to cultivate the most cordial and friendly relations. This feeling appears to pervade all classes, from the highest officials to the humblest citizens. The governor of New South Wales and lieutenant-governor, the premier, cabinet ministers, mayor, and other leading officials and citizens have for many years past united with the Americans in Sydney in celebrating the anniversary of the Declaration of Independence of the United States and exhibited in every possible way the great interest they take in the affairs of our country. The Sydney Morning Herald, the most conservative and believed to be the most loyal to the British Crown of any of the colonial journals, has repeatedly in its editorial columns directed attention to the growing desire on the part of the people here to bring about the closest ties of commerce and friendship between Australasia and the United States. In a recent article on the Vancouver service, a copy of which is hereto appended, it says:

Those who have studied the later development of political feelings in these colonies will freely recognize that in some points our sentiments are more in unison with those of America [meaning the United States] than with those of Canada; but, even were this not so, the case remains that there are hardly any practical matters in which we hold a common interest with Canada. It would be scarcely possible to mention a subject of Australian interest in respect to which we should derive strength from a closer political relation with Canada.

If the public feeling were to be gauged in every one of the colonies, the same feeling would be found to exist. The subsidy, however, as I have previously remarked, if granted, might for a time result in an injury to the interests of the United States by interfering with the present mail route to San Francisco.

The same persons interested in the Vancouver service are also moving in the direction of forming a company for the purpose of laying a cable between Vancouver's Island and Australia.

G. W. GRIFFIN,
Consul.

UNITED STATES CONSULATE,
Sydney, December 24, 1890.

[Inclosure 1 in Consul Griffin's report.—From the Sydney Morning Herald.]

It is apparent that the Dominion of Canada feels a strong interest in the question of closer communication with Australia. This interest is recalled to us by two items of news appearing in our Thursday's issue; one related to the formation of a powerful steam-ship company to maintain an Atlantic service between Great Britain and Canada and a Pacific service between Canada and Australia, the other referred to the visit next March of Mr. J. J. C. Abbott, to represent the Canadian Government in Australia and to discuss the subject of trade relations between the two countries. There is evidently a strong desire on the part of the Canadian Government to bring about a closer mutual dependence between the two groups of colonies, and it will be of great interest to see by what arguments the invitation addressed to us will be

supported. Hitherto the wooing has been wholly on the side of Canada. Australia has not yet given much encouragement to the suit; but, as the time approaches when it is to be pressed with greater vigor, it will be necessary to consider what answer must be returned to the suitor.

So far as we are able to gather from what has been made public on the subject, the Canadian suggestions are presented in two aspects: they have a political side and a commercial side, or, to put the case in another way, the proposals are of a commercial nature, but they are to some degree supported by political considerations. Canada desires to enter into close commercial relations with these colonies, but some of the reasons and sentiments which give rise to this desire are political in their nature. They seem to have their source in the idea of imperial federation. They are directed to endeavor to bring about greater political solidarity between the two countries, and to effect this by establishing closer trade relations in the first place. But, if there is any thing really practical in the commercial proposals which are to be submitted for our consideration, it will be wise to keep them carefully separated from any political objects of the kind which are usually associated with the policy of Sir John Macdonald. Australians by no means wish to repudiate their kinship with Canada; but, if the truth is told, it is quite certain—and the evidence was abundantly supplied by the course of the late federation debates—that they do not feel themselves at all more closely akin to Canada than they do to the great nation of the English race which forms the United States. Those who have studied the later developments of political feeling in these colonies will freely recognize that in some points our sentiments are more in unison with those of America than with those of Canada. But even were this not so, the case remains that there are hardly any practical matters in which we hold a common interest with Canada. It would be scarcely possible to mention a subject of Australian interest in respect to which we should derive strength from a closer political relation with Canada. There is scarcely a subject of Canadian interest in which the Dominion could rely on the sympathy and support of Australia. Most of Canada's great outside questions and outside dangers are caused by her proximity to the American Union. But Australia would never consent to commit herself to connections or obligations which might have the effect of making her a party to a quarrel between Canada and the United States and of making us enemies of a great power of our own kinsmen with which on our own account we could hardly have any possible cause for difference. Inasmuch as a country's outside relations usually depend upon its practical interests—and it is difficult to imagine any in common between us and Canada—it would be of little use, and it might be of great danger, to involve ourselves in political agreements which had no community of interest as their foundation and which might be a source of embarrassment and peril. So far, then, as the business associations of the two countries are concerned, it will probably be the better course to keep commercial matters on a strictly commercial footing, without complicating them with doubtful politics.

So far as we can at present see, the commercial proposals to be submitted to these colonies are twofold: we shall be asked to give our support in the shape of a subsidy of £40,000 a year to the Imperial line of steamers to connect us with Canada, and to enter into trade arrangements with the Dominion. Regarded by itself, it is, of course, a pleasant thing to have the offer of a new and well-managed line of communication as an alternative route via America with England; but we can not pause to consider the advantages of such a line without taking into account the price to be paid for it. The price named is £40,000 a year, and it is rather a large one. Our Government lately preferred to run the risk of losing the San Francisco service rather than be answerable for the sum of about £5,000 a year requisite to maintain it. It can hardly be doubted that as a passenger route the line through the United States would always be of greater interest and attractiveness than that through Canada. It would, perhaps, be well to have the choice of two routes, but the advantage would hardly be worth purchasing at the price it is proposed to ask. To put the matter plainly, while it is quite apparent that Canada has a very strong interest in this matter, having on her hands a long and costly railway to which she desires to attract traffic, the interest of Australia is not

at all so obvious. It will be desirable that this point should be worked out in a business spirit before the negotiations are pushed any further.

There remains the question of trade relations between the two countries. This seems to be the most doubtful part of the matter. How is it that we have but little or no trade relations with Canada now? The answer, we suppose, is that we are not so situated as to make trade interchange profitable. Interchange is usually most profitable when it takes place between two countries which differ largely as to their products and their requirements. Our chief business lies with England, because the position of the two countries corresponds with this condition. Australia is a young country which exports raw products and imports manufactured goods; England is an old and densely populated country which imports raw materials and ships her manufactures in exchange. But how does the case stand between us and Canada? We are both young, partially developed, thinly populated countries, and our exports belong in both cases mainly to the class of raw products. It is difficult to see what we could exchange with each other. It is quite apparent that on purely business lines we have little or nothing to exchange. But the reply is that it is proposed to alter these existing conditions by some sort of reciprocal arrangement which would tend to foster such a trade. It is, however, obvious that we could not encourage trade with Canada in this way except at the cost of discouraging trade with the rest of the world. To accord a trade advantage to one country is to impose a trade disadvantage on all the rest. It would be in the highest degree chimerical to ask us, for the sake of a dubious trade with Canada, to put relative disabilities on our trade with the United Kingdom. Attractive as this idea of entering into closer political and commercial relations with Canada may be, we can not afford to deal with it as a matter of sentiment. It must abide the commercial and business tests we apply to all similar practical matters, that we may determine whether the policy proposed is one of proper and natural development or whether it is too forced and artificial to merit approval.

[Inclosure 2 in Consul Griffin's report.—From the Sydney Morning Herald of December 17, 1890.]

A cablegram informs us that early in January next the Marquis of Hartington will introduce to the Marquis of Salisbury a deputation of the agents-general for Australia, who will urge the premier to grant a subsidy towards the conveyance of mails to Australia via Canada, the terminal point of the American service being Vancouver Island. This statement calls for explanation, because it seems to imply either that the agents-general are proposing to take the initiative in a question of public policy seriously affecting their respective colonies or that they have received instructions from the colonial governments in anticipation of any settlement of this question of policy by the colonial parliaments. If the English Government is to be asked by the Australian agents-general to subsidize the proposed Canadian-Pacific mail service, the question will naturally be asked whether the colonies are prepared to join in granting a subsidy. It has been suggested that the Australian colonies should contribute £40,000 a year, and it is impossible to suppose that either the colonies or England would consent to deal with this matter of joint interest on independent lines. The service would have to be taken as a whole. We could not be expected to subsidize a service between Australia and Canada unless we were assured of its continuation from Canada to England. In like manner it is not for us to ask the English Government to grant a subsidy to the service on the other side unless we are willing to pay our part on this. It is difficult to see how the Australian agents-general can approach Lord Salisbury for the purpose stated without in some sense committing the colonies to participate in the cost of the service, if the Imperial Government also will do so. But it ought to be evident that the agents-general have no right to commit their colonies in a matter of this kind. And, so far as New South Wales is concerned, the question of the new Pacific mail service, although it has been in view for some time past, has not been made the subject of Parliamentary discussion and settlement. Ministers act under responsibility to Parliament, but it would be overstraining the doctrine of

responsibility to commit the colony to an understanding with the Imperial Government in this business before our Parliament had been expressly consulted. We are not here discussing the question of the expediency or in expediency of establishing the proposed service, but simply wish to direct attention to the indication contained in the cablegram that somebody seems disposed to travel rather too fast with this project.

FREIGHT RATES BETWEEN PANAMA AND CHILI.

REPORT BY CONSUL DAUGHERTY, OF CALLAO.

I have the honor to submit herewith a table of freight rates on live stock furnished to-day to the American representative of the Ohio Stock Exportation Company:

Animals.	Freight rate from Panama to—	
	Callao.	Valparaiso.
	Sols.*	Sols.*
Horses.....	40	60
Donkeys.....	30	45
Cattle (oxen or cows).....	17	32

* 1 silver sol=68 cents.

The carts pay freight at the rate of 20 sols per ton, weight or measurement, for Callao or Valparaiso.

This company has been for years engaged in the importation of American live stock to Chili and Peru. These rates are double the rates usually charged, so I am informed by this representative, and will greatly retard, if they do not entirely prohibit, further importations for a time by this company.

It is well known already that there is no longer competition between the English and Chilian lines of steam-ships plying between Panama and the west coast of South America.

This list of rates illustrates well the chief difficulty in the path of the American exporter of live stock.

I am reliably informed by an American house here that, notwithstanding the sharp competition which existed for a long time between the lines above mentioned, and which only terminated by mutual agreement July 5 of the present year, the Chilian line paid a dividend of 7 per cent. for the first six months of the year, and the stockholders have assurances that the dividend for the last six months of this year will certainly reach 10 per cent. and possibly 12 per cent.

Americans hardly need the help of the consul to draw correct inferences.

A. J. DAUGHERTY,

Consul.

UNITED STATES CONSULATE,

Callao, November 22, 1890.

AMERICAN-MELBOURNE TRADE.

REPORT BY CONSUL-GENERAL WALLACE.

THE PROVINCE OF VICTORIA.

The province of Victoria is the southeastern portion of the continent of Australia, and lies between the thirty-fourth and thirty-ninth parallels of south latitude and the one hundred and forty-first and one hundred and fiftieth parallels of east longitude. It is the smallest, but most densely populated, geographical division of Australia, being but 3 per cent. (87,884 square miles) of the total area, with a population of 1,104,300, or of 12.7 persons to the square mile; of these, 58.55 per cent., or 641,620, are urban and 41.45 per cent., or 462,680, are rural. The principal inlet on the coast is Port Phillip Bay, which is an inland sea of an extreme length of over 30 geographical miles from north to south and of 35 miles from east to west, the entrance to which is about 2 miles across, with a well buoyed channel.

THE CITY OF MELBOURNE.

Melbourne, the metropolis and capital, is situated at the head of Port Phillip Bay, on the banks of the river Yarra, and contains a population of 445,220, making it the second largest city in the southern hemisphere. The harbor trust during the past few years has expended over £2,000,000 in deepening the river from 13 to 22 feet, extending the wharves over 1½ miles, erecting warehouses and sheds for storage, and generally facilitating the shipping interests of the city.

There are at present two fortnightly lines of Royal Mail steamers averaging over 5,000 tons burden, under the British flag, and two monthly lines of equal size, one under the German and one under the French flag, plying between this port and Europe.

The people of Victoria are prosperous, and money is abundant. The estimated wealth of the province is £353,376,000, equal to £320 per capita.

There is a great demand for all the necessities and many of the luxuries of life, which their own country will not readily produce.

IMPORTS.

The total imports for the year 1889 were £23,674,132, or \$115,210,163.37, and the United States is third upon the list of countries which furnished this amount, England being first and New South Wales second. The amount of imports from the United States, as furnished by the customs authorities here, is given in the inclosed table, which for convenience has been reduced to the currency of the United States.

After careful comparison and diligent inquiry, it became evident that these amounts do not represent all of the imports from the United States, and

a letter to the secretary of trade and customs, Hon. A. W. Musgrove, on the subject brought the following in reply:

DEPARTMENT OF TRADE AND CUSTOMS,

Melbourne, December 9, 1890.

SIR: I have the honor, in reply to your inquiry, to give the following explanation of the discrepancy between the import and export returns published by this department and the statistics collected by yourself.

As regards imports, a large quantity of American merchandise reaches this colony by way of Great Britain and New South Wales, and this is entered as from those countries. It is not known how much arrives by these indirect routes, and any estimate might be more misleading than valuable; but the quantity of tobacco which appears as having been imported from Great Britain in the year 1889 is valued at more than £130,000, and this is known to be almost entirely of American manufacture.

The exports are affected in the same way. Wool and other merchandise are sent by way of Great Britain, and inquiries made lead to the belief that half the wool sent to the United States was shipped by this route, and is consequently not included in the returns of exports to the United States; and goods for the west coast of America are sent largely by way of Sydney, and for these reasons the export statistics of this colony can not be looked upon as a fair statement of the trade of this colony to America.

I have the honor to be, sir, your obedient servant,

A. W. MUSGROVE,

Secretary.

A memorandum from the department of trade and customs on the subject is as follows:

MELBOURNE CUSTOM-HOUSE, STATISTICAL BRANCH,

Melbourne, December 5, 1890.

In addition to the articles enumerated in the return of imports from the United States of America during the ten years 1880-'89, inclusive, I would point out that tobacco was imported from the United Kingdom during that period amounting to 7,251,130 pounds, valued at £539,172, exclusive of cigars, as shown in the following statement, viz:

Table showing imports of tobacco into the colony of Victoria from Great Britain during the years 1880-'89, inclusive.

Year.	Manufactured.	Unmanufactured.	Total.	
			Quantity.	Value.
	Pounds.	Pounds.	Pounds.	
1880.....	101,175	41,297	142,472	\$39,340. 78
1881.....	5,180	56,179	61,359	19,587. 66
1882.....	108,753	93,674	202,427	77,070. 72
1883.....	311,116	119,822	430,238	170,342. 10
1884.....	347,377	152,347	499,724	185,447. 70
1885.....	662,316	81,117	743,433	289,376. 68
1886.....	498,017	312,722	810,739	258,946. 46
1887.....	710,352	128,307	838,659	304,764. 56
1888.....	1,455,342	192,324	1,647,666	597,893. 31
1889.....	1,747,017	127,395	1,874,412	681,196. 79

This is believed to have been almost exclusively the product of the United States.

(Signed,)

JAMES REED,

Statist.

If this amount be added to the amount of direct imports, the total will be £1,130,988, and, if to this be added £225,000 as the estimated amount of the imports of tobacco, coal-oil, hardware, carriage material, etc., imported via New South Wales from the western coast of the United States and Great Britain, the grand total is £1,355,988, or \$6,598,915.60; and it is firmly believed here, that if there were direct steam communication between Port Phillip Bay and the ports of San Francisco, Cal., and New York City, this amount would be increased to over £2,000,000, or \$10,000,000, and such lines of communication and transport are very earnestly desired by the merchants dealing in American products and the people generally.

Following the table of imports is a summary of the exports to the United States from Victoria during the year 1889.

Articles.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
Agricultural implements.....	\$5,581.88	\$6,024.93	\$11,373.01	\$11,937.52	\$13,124.95	\$1,786.00	\$7,917.80	\$4,311.72	\$14,458.37	\$9,742.73
Apparel and slops.....	24.33	613.18	350.38	1,192.29	457.45	.....	2,681.45	131.40	155.73	4,994.90
Arms, sporting.....	180.06	1,883.33	2,039.06	603.44	1,674.08	1,834.66	843.90	1,700.87	5,401.81	6,954.23
Arms and ammunition.....	.....	214.13	97.33	.....	340.65	729.98	914.90	997.33	1,970.93	4,287.38
Axles and arms.....	3,868.86	3,250.82	14,278.31	6,847.16	6,389.71	8,204.92	10,209.92	6,214.52	13,197.95	15,446.27
Beer:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bottled, and lager.....	19.47	.....	.....	2,097.46	3,148.36	12,964.36	24,624.22	32,858.62	24,059.97	18,896.62
Draft.....	.....	.....	.....	.....	.....	.....	16,555.83	1,338.28	8,180.58	9,372.88
Broom-corn and millet.....	700.76	5,226.62	6,389.71	24,994.34	2,919.90	.....	2,949.10	11,046.95	18,786.56	28,532.20
Brush ware and brooms.....	4,253.31	2,652.24	1,873.60	686.18	2,053.66	2,243.45	4,117.06	1,883.35	2,869.63	2,550.84
Carriages and carts.....	.....	1,615.32	4,759.96	5,664.61	28,016.44	19,650.93	3,946.72	6,487.04	1,411.28	9,793.84
Carriage materials.....	4,097.89	8,569.91	11,845.06	15,747.99	22,643.82	18,288.30	16,443.90	12,171.11	12,706.43	19,480.60
Clocks.....	10,458.14	21,621.86	48,514.14	39,574.38	27,602.79	24,931.08	28,532.29	20,400.37	37,165.46	41,394.45
Confectionery.....	38.93	340.65	.....	150.86	43.80	38.93	105.46	1,382.09	866.23	8,822.96
Cordage.....	223.86	257.92	618.04	3,377.34	.....	2,233.72	23,797.18	35,564.38	9,046.82	35,413.52
Cotton piece-goods.....	1,956.33	5,737.60	1,902.80	9,105.22	1,931.99	2,061.02	5,280.95	4,400.05	10,677.10	8,204.92
Drugs and chemicals.....	2,944.23	3,596.34	1,328.55	5,693.80	4,277.04	6,847.75	3,377.34	2,769.04	10,414.31	13,582.40
Engines, steam.....	.....	807.84	885.70	.....	6,973.69	681.31	.....	3,572.00	1,523.21	.....
Fancy goods.....	447.71	535.31	4,160.85	1,722.73	885.70	4,202.25	2,637.64	2,365.12	5,484.54	8,612.90
Fish:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Preserved.....	14,307.51	24,162.17	22,721.69	23,281.33	33,457.18	29,340.12	41,701.03	32,114.03	96,502.69	138,631.98
Salted.....	1,717.87	3,533.08	6,837.43	2,399.18	5,102.55	24,215.70	5,002.76	5,793.00	10,202.64	3,844.53
Fruits, dried.....	671.57	10,725.76	15,280.81	5,966.33	14,580.03	20,672.89	97.33	476.91	9,241.48	3,640.14
Furniture and upholstery.....	39,112.06	60,943.18	85,553.07	53,307.63	70,763.77	92,658.16	90,244.37	22,059.84	46,898.46	102,615.02
-Glassware.....	9,640.33	13,976.23	6,341.05	6,341.05	8,214.65	12,102.98	27,461.00	18,740.89	28,157.17	16,950.02
Grindery.....	15,353.80	15,363.54	7,684.20	5,396.95	16,244.37	9,572.40	8,273.05	11,660.13	34,073.91	11,830.46
Haberdashery.....	851.63	841.90	1,211.75	3,421.15	11,110.22	1,980.66	.....	1,567.62	7,740.10	.....
Hardware and iron-mongery.....	41,180.32	44,864.26	68,291.59	70,131.12	65,274.36	95,972.24	1,742.20	79,912.70	135,108.64	177,767.84
India rubber goods.....	2,355.38	2,355.86	1,279.89	4,802.23	919.77	2,939.36	4,423.64	2,418.64	2,442.98	4,267.91
Instruments:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Musical (organs).....	10,677.10	28,264.63	59,989.34	30,907.14	47,156.38	52,456.00	32,221.09	33,457.18	54,001.04	64,461.66
Surgical.....	68.13	3,192.42	14.60	871.10	408.76	2,216.62	1,708.13	1,489.15	574.24	4,608.57
Iron:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bolts and nuts.....	589.11	1,635.14	4,861.63	3,051.29	1,863.87	6,360.51	4,121.99	6,530.84	6,998.02	6,822.93

Wire.....	360.18	10,939.89	4,949.23	7,066.15	457.45	467.18	2,468.91	4,170.58	27,317.77	9,588.61
Leather:										
Fancy and patent.....	18,974.09	25,646.45	26,853.35	36,590.14	28,698.82	30,736.81	47,331.04	36,790.74	59,090.10	75,786.00
All other.....	20,064.58	34,902.53	38,776.27	10,083.39	21,091.41	21,602.39	10,553.59	6,086.57	21,766.98	13,217.41
Leather ware.....	2,311.58	4,228.99	9,931.99	6,034.46	2,593.84	5,577.01	7,466.81	5,709.53	7,314.35	9,800.86
Machinery:										
Agricultural.....	10,278.04	30,882.81	34,484.02	68,822.04	176,769.19	8,647.77	21,874.91	77,601.21	176,644.22	184,483.70
Other.....	11,893.72	28,156.91	68,500.85	28,480.07	50,389.71	36,995.13	43,443.24	44,709.67	88,614.09	100,902.01
Maize and corn flour.....	26,795.75	37,594.18	24,097.48	8,672.10	18,249.37	2,155.86	19,003.68	26,493.35	34,430.48	40,610.94
Manufactures of metals.....	16,516.90	22,308.03	48,397.34	43,268.05	44,109.96	56,831.78	64,252.40	64,709.84	91,631.33	109,768.77
Marble, unwrought.....							1,600.54	48.66	734.83	5,416.41
Medicines, patent.....	10,462.97	9,202.55	19,967.25	7,319.21	15,100.75	26,597.99	38,799.87	19,475.73	26,801.23	27,241.91
Metal ware, mixed.....	1,756.80	1,625.40	4,501.51	5,625.67	9,543.20	8,774.30	15,139.68	15,300.27	16,424.43	16,205.44
Nails.....	7,538.20	10,769.56	19,059.34	16,531.50	13,825.72	17,957.38	21,103.60	9,859.52	16,910.82	13,051.95
Oil:										
Kerosene.....	359,256.60	366,202.64	344,645.53	248,566.22	317,110.87	539,616.98	398,269.48	281,054.97	641,248.97	366,078.51
Lard.....	5,207.15	1,747.06	3,946.72	5,007.62	9,489.67	17,212.81	32,634.75	22,955.28	10,205.05	11,499.54
Lubricating.....	3,377.34	3,270.28	3,834.80	3,280.01	2,199.65	5,568.52	3,786.13	6,487.04	8,566.10	10,716.03
Mineral.....	437.98	9,548.07	12,511.77	18,560.83	18,658.16	21,174.14	13,455.87	21,850.58	18,138.10	25,695.12
Ordnance stores.....	29,067.60	1,017.09	900.30	70,564.25		1,946.00		4,978.43	1,678.94	8,545.57
Paper:										
Bags.....		656.97			1,221.48		11,188.08	6,579.50	4,370.11	7,119.69
Printing.....		413.65	588.84	2,924.76	1,868.73	2,919.90	963.56	4,928.96	1,630.27	14,132.31
Other.....	749.44	12,643.16	21,704.59	27,972.64	26,327.75	39,029.33	1,333.41	1,588.07	1,479.41	8,521.24
Plated ware.....	1,708.13	2,949.09	1,820.80	700.77	788.37	710.50	36,961.06	34,386.68	59,631.64	29,967.90
Printing materials.....	6,662.23	12,759.96	26,210.97	20,935.68	11,530.00	28,318.16	1,041.72	5,766.80	8,827.83	20,020.78
Plaster of Paris.....	35,481.65	38,754.09	23,666.84	20,945.41	27,159.00	36,270.00	40,912.66	25,145.20	47,462.97	55,040.11
Resin.....	155.72	1,810.33	948.96	394.18	876.58	1,742.20	30,498.35	15,061.81	20,682.62	49,477.70
Saddlery and harness.....	6,185.32	11,582.27	35,043.66	25,583.19	33,218.72	30,950.94	6,681.70	31,710.11	38,893.06	43,591.64
Sausage skins.....	39,595.68	92,653.29	96,235.03	80,253.44	59,176.64	63,580.84	36,210.49	36,210.49	57,906.47	130,597.38
Sewing machines.....	16,278.44	69,868.33	120,611.33	30,569.98	73,858.86	80,822.83	88,126.64	37,092.46	127,156.71	139,872.94
Slates, roofing.....	44,090.49	55,930.67	55,453.76	54,076.54	50,480.19	48,757.46	44,703.66	28,746.41	42,270.41	29,281.73
Spirits.....	2,129.53	6,326.45	9,402.07	4,978.42	5,868.99	8,453.11	15,056.95	11,363.27	24,678.02	30,551.88
Stationery.....	13,543.46	87,660.26	97,101.53	59,989.34	105,622.51	281,882.27	148,715.36	267,550.43	11,261.08	2,394.31
Sugar.....										
Timber:										
Deals.....	77.86		671.57	3,138.89		29,199.00	1,793.27	973.30	24,697.48	29,194.13
Dressed.....	120,708.66	98,595.29	198,236.87	153,698.66	234,365.76	219,761.40	200,957.24	234,555.56	312,025.64	328,394.96
Undressed.....	159,022.61	249,539.51	471,870.43	396,493.21	444,068.12	382,346.30	714,918.04	637,102.70	1,660,444.93	1,196,852.41

Articles.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
Timber—Continued.										
Laths	\$4,593.97	\$18,103.38	\$23,106.27	\$24,420.83	\$34,357.49	\$44,912.92	\$68,559.25	\$6,268.05	\$68,038.53	\$63,030.90
Pickets	2,282.38	7,217.01	12,789.16	12,915.69	11,387.61	26,191.50	32,109.16	21,183.87	62,758.37	43,574.64
Shooks and staves		1,284.75	8,668.36	3,338.41	8,666.70	3,581.73	4,321.45	3,591.47	7,937.26	13,100.61
Tobacco:										
Manufactured	326,016.56	367,250.42	578,660.91	314,989.07	375,216.88	402,975.39	506,729.17	403,247.92	338,583.18	166,580.29
Unmanufactured	42,426.14	62,437.19	52,168.88	38,977.13	64,335.13	61,989.47	66,632.11	31,388.92	55,663.02	71,034.88
Cigars and cigarettes	26,824.14	9,031.69	24,011.31	24,040.31	19,295.67	23,305.66	4,817.83	4,379.85	7,586.86	978.16
Tools and utensils	80,774.16	81,431.13	113,365.11	81,937.25	59,390.76	60,154.80	59,132.84	46,056.55	83,990.92	102,911.89
Toys	1,649.74	2,296.98	3,075.62	2,423.51	1,917.40	4,691.30	4,739.96	2,110.92	4,472.30	7,173.41
Turpentine	21,689.99	28,283.09	52,261.34	37,826.91	53,312.50	43,063.65	33,087.33	34,125.62	68,272.13	53,020.51
Wooden ware	55,317.60	74,335.78	155,859.39	124,370.94	99,307.99	98,999.23	130,276.20	96,346.96	110,656.00	148,301.71
All other articles	73,055.89	156,277.90	147,620.40	82,068.65	224,014.72	493,179.79	342,016.98	223,494.01	360,408.12	292,204.12
Total	1,765,780.32	2,294,905.13	3,313,419.78	2,576,388.36	3,007,462.93	3,638,939.97	3,678,563.01	3,266,545.66	5,414,078.33	4,822,745.29

Table showing the exports from Victoria to the United States during the year 1889.

Articles.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Books.....			\$447.80		\$447.80
Bottles, empty.....			258.59		258.59
Coal.....	\$6,171.76				6,171.76
Cork, virgin.....	13.58				13.58
Fire-arms.....				\$1,865.12	1,865.12
Ferns.....		\$986.70			986.70
Gum.....				97.33	97.33
Hops.....		2,173.93			2,173.93
Hardware.....				372.98	372.98
Machinery.....	1,150.00				1,150.00
Mirrors.....			82.15		82.15
Models, reaper and mower.....		340.65			340.65
Oil (<i>Eucalyptus</i>).....		79.94	162.98	82.89	325.81
Photographs.....	4,922.07				4,922.07
Pelts.....			71.18		71.18
Returned exhibits.....	1,941.96				1,941.96
Rugs and mats.....		133.59	304.18	601.05	1,038.82
Skins:					
Kangaroo.....	47,807.58	32,197.58	61,649.15	35,612.41	177,266.72
Wallaby.....			1,388.13		1,388.13
Purdos d'Australia.....		3,866.03			3,866.03
Sheep casings.....	22,639.09	10,651.69	12,128.93	6,455.51	51,876.28
Shirtings.....			282.28		282.28
Tobacco.....			10.06		10.06
Tin.....		4,635.51			4,635.51
Wearing apparel.....		171.62			171.62
Wine.....	87.75				87.75
Wool.....	261,748.81		83.93	1,015,989.80	1,277,822.54
Miscellaneous.....		70.06			70.06
Total.....	346,492.60	55,307.30	76,869.36	1,061,077.15	1,539,746.41

GEO. H. WALLACE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Melbourne, December 30, 1890.

IMPORTATION OF HOGS INTO GERMANY.

REPORT BY CONSUL-GENERAL EDWARDS, OF BERLIN.

I have the honor to invite attention to the inclosed translation from the *Deutsches Reichs Anzeiger* of November 11, 1890, from which it will be seen that, by order of the department of the interior and with the approval of the imperial chancellor, the importation of living hogs into the slaughter-house at Schneeberg (Saxony) from Austria-Hungary is allowed until further notice. It will also be observed that the importation of living hogs from Bielitz, Biala, and Steinbruch, in Austria, into the slaughter-houses at Sagan, Sprottau, Lauban, and Jauer, in Prussia, is now permitted.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, November 12, 1890.

[Inclosure in Consul-General Edwards's report.—Translated from the *Deutsches Reichs Anzeiger* of November 11, 1890.]

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STOCK-FEEDING EXPERIMENTS.

REPORT BY CONSUL RYDER, OF COPENHAGEN.

For many years back scientific researches have frequently been made in this country on the relative values of the various feeding substances as influencing the yield of milk, and from which considerable variance of conditions in the most important nutritive substances—albumen, fatty and saccharine matter—was shown to exist in the ordinary food stuffs, such as grain, bran, oil-cakes, hay, straw, and roots. Too great inclination, however, was perhaps shown in former researches to view the question in an analytical point of view. Too much work was performed in the laboratory and not sufficient amongst the live animals, and hence the importance of the fodder materials in relation to the animals' digestive process was by no means to be found at all times in accord with the results arrived at from the analytical works of the laboratory. The contributions from several of these researches, as a guide towards a proper course of feeding, were thus of meager value. There the work has been taken up afresh in recent years in a more practical way. Several experimental trials have been set on foot since 1887, which have already borne good fruit, and which, as they are gradually being developed, may prove of great use to agriculturists.

The results obtained from some of the feeding experiments with milch cows in 1887, 1888, and 1889 are now given. The question which it was sought to solve with the experiments of 1887-'88 was whether a sufficient proportion of roots to what might be considered a fairly plentiful feeding, consisting of grain, bran, oil-cakes, etc., together with hay and straw, affected in any perceptible degree the quantity of milk, as also the butter yield.

The experiments in 1888-'89 had partly the same object in view, but partly, also, with the further view of gathering further information as to how far a given quantity of roots and of strong food could take the place of the one or the other without causing any perceptible influence on the milk yield or on the composition of the milk, namely, upon its fatty contents, and also upon the thriving condition of the animals.

The experiments in 1887-'88 were held at five farms with three herds of cows at each farm, each herd consisting of ten to twelve cows. According to the prearranged plan for these experiments, one herd received the same amount of strong food as was given to the remaining animals on the farm, together with hay and straw; the second herd received, in addition, a fur-

ther contribution of 36 pounds of mangolds, whilst the third herd received the additional contribution of 36 pounds of turnips.

The experiments in 1888-'89 were carried on at each farm with four herds, each herd consisting of ten cows. In order that the food experiment might, so far as possible, be identical with the food generally used on the best dairy farms, the compounding of the fundamental parts was left entirely to the judgment of the parties in charge of these experiments. In this way, of the four different herds of cows, the first was supplied with the ordinary strong food given at the farm; the second received 2 pounds less of strong food, but an addition of 20 pounds of mangolds or 24 pounds of turnips; the third received 4 pounds less of strong food than was given to the first herd, but in substitute thereof 40 pounds of mangolds or 48 pounds of turnips; and, finally, the fourth herd received as full an allowance of strong food as the first herd and an additional contribution of 40 pounds of mangolds or 48 pounds of turnips. The second and third herds represented the normal course of feeding at the farm, just as the farm in question was accustomed to feed with 20 or 40 pounds of roots, and all four herds received a like quantity of hay and straw.

The quantity and composition of the strong food, as well as the amount of hay, varied considerably at the five farms. For example, at one of the farms to the first lot were daily given 7 pounds of strong food per cow, whilst at another farm there were given 12 pounds. It was also here left to the experimental superintendents to determine on which kind of strong food the reduction for the second and third herds should be made.

All the experiments associated with the daily work in the stalls—the weighing of the food, milking, taking milk samples and determining their cream percentage, the weighing of the cows, etc.—was left in the hands of the delegated food superintendents. The actual duration of the experiments comprised six or seven periods, each of ten days. Previous to these there was a preparatory and a transition period. During the preparatory stage all the animals received an identical course of feeding, so that a homogeneous lot of cows might be formed; by which it is to be understood that the lot, as a whole, approached so closely one to the other in the quantity of milk and its fatty contents, in their calving time, weight, and age, that, after best judgment, it might be assumed that these herds, when identically fed during many months, would yield as nearly as possible a like quantity and an equally fatty milk.

To obtain these results it was necessary to institute very careful researches. First of all, it was necessary to form a preparatory herd of animals, with which the work could be carried on until sufficient surety was obtained that the herds were of fully homogeneous nature, and during the transition period the animals were accustomed little by little to such kind of food as they would would receive during the experimental period.

The result of the experiments in 1887-'88 may be briefly given as follows: The additional contribution of root products to the strong food supplied to

the animals shows a no inconsiderable increase in the milk yield, as well as in the weight of the animal (greatest with mangolds and less with turnips), and that the feeding with roots has not manifested any discernible influence upon the fatty contents of the milk or other chemical compound. The opinion previously held by many, that, though an addition of roots might increase the amount of milk yield, it would at the same time make the milk thinner, is thus proved to have been quite erroneous.

From these experiments, however, all estimates of the money value of the roots employed were omitted, and, as, with the addition of a certain quantity of strong food, similar results might be obtained, the question was suggested that it would be desirable to ascertain how great an addition of strong food would be required in order to obtain the same increase in the milk yield, as also in the weight of the animal, as with the roots. This question was sought to be solved with the experiments carried on in 1888-'89. The result of these was that in the food mixtures employed during these experimental trials 10 pounds of mangolds or 12 pounds of turnips and 1 pound of strong food were found to offer compensation as closely as possible one for the other, both with respect to the quantity of milk or its composition and the animal's weight. Thus the money value of 10 or 12 pounds of roots can be placed at the same value as 1 pound of strong food.

It is still felt here, however, that these experiments, so far as they have been carried on, have gone no further than to give a reply to one definite question, which, no doubt, is of great practical interest; but, at the same time, they should only be considered as the commencement of a greater work, and that the questions to be solved hereafter must be more numerous and of wider range. The goal, if possible, should be the obtaining of reliable results as to what food and mixture should be employed which under given conditions would produce the greatest possible milk yield and the finest quality of butter at the smallest possible cost. Some of the difficulties attending the solution of these points must be faced, namely, what influence does the breed, age, weight, milking properties, etc., of the animal exercise over such results?

HENRY B. RYDER,

UNITED STATES CONSULATE,

Consul.

Copenhagen, December 27, 1890.

Farming in Scotland.—This year shows large imports of Canadian cattle. Indeed, their numbers cause much astonishment, and the figures they realize are often above the general expectation. They pay the feeders more than home beasts. This is, perhaps, fortunate, inasmuch as the farmer, who has to live largely by fattening beesves, has in this trade an added chance for comfortable existence. The truth is, as I formerly reported, that agriculture, to pay, must now be many-sided. The latest movement is in the direction of the breeding of horses for road and field, for cart and plow.—JAMES D. REID, *Commercial Agent, Dunfermline, December 10, 1890.*

GERMAN SUGAR-BEET LEGISLATION.

REPORT BY COMMERCIAL AGENT WASHBURN, OF MAGDEBURG.

INTRODUCTION.

Two things have contributed to Germany's present ascendancy in the production and exportation of raw beet sugar: the first is the superiority of soil and climate for the growing of the beet root; the second is the peculiar encouragement given the industry itself by the Government. It is to this latter factor that I wish to call attention in this report.

NATURE OF THE GERMAN TAX AND HOW IT WORKS.

The imposing of a tax on raw beets destined for the manufacture of sugar, with the accompanying rebate for the finished product when exported, is German in its origin, and is known as the "material tax," or "weight duty." This system presents no difficulties so long as the manufactured sugar goes into the home consumption, because the State treasury retains the amount of the tax in full. The moment, however, that the product is destined for the foreign market it imposes upon the customs authorities the responsibility of determining the exact amount of rebate to be granted. Though it is universally recognized that the effect of the present system is one of concealed bounties, the theory of the law is that of re-imbursement. In other words, the Government contracts to return the amount of the tax upon all exported sugar, thus enabling the seller the better to compete in the world's market. To this end it is necessary to establish by law the estimated amount of raw beets required to produce a given quantity of sugar. Clearly, this will vary in different years and in different districts. An average rebate is therefore always sought. It thus happens that to those factories which work up beets rich in sugar and which have improved appliances the rebate comes, not as a re-imbursement only, but as a bounty as well.

LEGISLATION, PAST AND PRESENT.

The history of recent sugar legislation is one of experiments, but all consistently tending towards one ultimate object—the suppression of the premiums. Prior to 1861 no rebate was allowed. The material tax pure and simple had, however, existed since 1844. The law of September 1 of that year placed the duty at 30 pfennigs* per 100 kilograms† of raw beets. This tax was steadily increased from time to time up to the passage of the present law, when it was materially modified.

The accompanying table shows the amount of tax per 100 kilograms from 1844 to 1891.

* 1 mark of 100 pfennigs = 23.8 cents.

† 1 kilogram = 2.205 pounds.

Period of enforcement.	Amount.	Period of enforcement.	Amount.
	<i>Marks.</i>		<i>Marks.</i>
September 1, 1844, to September 1, 1850.....	0.30	September 1, 1869, to September 1, 1886....	1.60
September 1, 1850, to September 1, 1853.....	0.60	September 1, 1886, to September 1, 1888....	1.70
September 1, 1853, to September 1, 1858.....	1.20	September 1, 1888.....	0.8c
September 1, 1858, to September 1, 1869.....	1.50		

Law of 1869 and its important results.—In 1869 a thorough classification of the material tax and rebate took place. This law remained unchanged until 1883, and is regarded as having a more important bearing on the development of the beet root industry than any other law which has been placed on the statute books. Its main provisions are here appended. It imposed a weight duty of 1.60 marks upon each 100 kilograms of raw beets. Upon home or foreign sugar exported beyond the customs frontier the following rebate was granted per 100 kilograms: (1) For raw sugar of at least 88 per cent. polarization, 18.80 marks; (2) for candy and sugar in white, full, hard loaves up to 25 pounds net weight or sugar crushed in the presence of the customs authorities, 23 marks; (3) for all other hard sugars, as well as for all white, dry (containing not less than 1 per cent. of water) sugar in crystals, crumbs, or flower form of at least 98 per cent. polarization, 21.60 marks. To receive the benefit of this drawback the amount exported must at least have reached 500 kilograms. Exportation could only take place through custom-houses indicated by the Bundesrath, and fines and penalties were attached for false declarations.

Two important results of this law are to be noted. Since the tax was imposed, not on the sugar itself, but on the raw beets, farmers took great pains to increase the saccharine richness of the beets, and the manufacturers strove to devise more economical methods of extracting the sugar. What this means is most forcibly illustrated by a reference to recent French legislation. In 1884 it was estimated that it required about 17 tons of roots in France to produce a ton of sugar, as against 9½ tons in Germany for the same purpose. In that year the German material tax was adopted.

Its results are seen in the following table, which shows the quantity of raw beets required to produce a double centner* of sugar for the years 1884-'85 to 1889-'90, inclusive:

Year.	Quantity.	Year.	Quantity.
	<i>D. centners.</i>		<i>D. centners.</i>
1884-'85.....	15.02	1887-'88.....	9.44
1885-'86.....	11.42	1888-'89.....	9.16
1886-'87.....	10.15	1889-'90.....	8.56

For the current year it is believed that the ratio will sink to 7.50 double centners of raw beets to 1 double centner of sugar.

* 1 double centner=100 kilograms.

Experimental legislation.—As a source of revenue, the law of 1869 was a failure. While under its fostering provisions the production of sugar was yearly increased, and with it the export trade, the receipts from the material tax showed no corresponding growth. Accordingly, measures looking to the modification of the law were initiated by the preliminary act of July 7, 1883. This act merely lowered the rebate scale and proposed further legislation in two years. In the meantime, in the autumn of 1883, a commission was appointed which examined carefully into all proposals relating to the taxing of sugar. Their recommendations were embodied in a report to the Reichstag in the early summer of 1884 (June 11). Following this on May 13, 1885, the law of 1883, about to expire by time limit, was given another year's lease of life, that is, until August 1, 1886. This afforded opportunity for further investigation. The result was the law of July 1, 1886. This measure raised the material tax 10 pfennigs and still further lowered the rebate scale. It was hardly published before it was seen to be insufficient. A considerable bounty was still possible. Just what the bounty was I have not been able to learn. In a speech on July 9, 1884, the French minister of agriculture is reported to have said that it was equivalent to 3 francs per 100 kilograms on the whole crop and 7 francs on the amount exported.

Unsatisfactory results of the present law.—It becoming evident that no effectual reform could be had by adhering to the old system, a new principle, more sweeping and radical in its provisions than any thing hitherto attempted, was introduced into the law of July 9, 1887. This was the consumption tax, by which all sugars entering into home consumption were required to pay a certain duty. The old material tax on the beet root and the rebate were still retained, though both were reduced. This law, which is still in force, went into effect on August 1, 1888. The schedules were arranged as follows:

The material tax was fixed at 80 pfennigs per 100 kilograms. This was a reduction of 90 pfennigs.

The rebate per 100 kilograms was: (1) For raw sugar of at least 90 per cent. and for refined sugar containing less than 98 per cent., but at least 90 per cent., of sugar, 8.50 marks; (2) for candies and for sugars in white, full, hard loaves, blocks, plates, sticks, or cubes, or crushed in the presence of the revenue officers and for other sugars of at least 99½ per cent. purity which at any time may be classified by the federal council, 10.65 marks; (3) for all other hard sugar, as well as for all white, dry (not containing over 1 per cent. water) sugar in crystal, crumb, or flower form containing at least 98 per cent. sugar, so long as they do not fall under 2, 10 marks.

The actual workings of this measure, while yielding to the imperial treasury a larger income than was possible under the old system, do not seem to have met the expectations of its projectors. It seems to be regarded as a financial fiasco, and it is believed that handsome profits still accrue to the manufacturers.

The clear amount received by the Government from the sugar tax for the last five years, after deducting the managing expenses, which are reckoned at about 4 per cent., is:

	Marks.
1885-'86.....	16,932,822
1886-'87.....	13,510,145
1887-'88.....	21,270,284
1888-'89.....	47,298,681
1889-'90.....	60,369,848

An analysis of the receipts for the last two working years, during which time the additional consumption tax provided for by the new law has been in force, shows the following:

	Marks.
1888-'89.	
78,961,830 double centners of raw beets were consumed, on which there was a material tax of 80 pfennigs per 100 kilograms.....	63,169,464
From this re-imbursements were allowed:	Marks.
On 4,124,242 double centners of raw sugar at 8.50 marks....	35,056,057
On 1,641,518 double centners of candies at 10.65 marks.....	17,482,167
On 156,506 double centners of crushed sugar at 10 marks.....	1,665,060
	<hr/> 54,103,284
	9,066,180
Deducting managing expenses at 4 per cent.....	2,526,779
Net receipts from the material tax.....	6,539,401
Net receipts from the consumption tax.....	40,759,280
Total income.....	<hr/> 47,298,681

	Marks.
1889-'90.	
98,250,394 double centners of raw beets at 80 pfennigs.....	78,600,315
The re-imbursements were:	
On 4,938,309 double centners of raw sugar at 8.50 marks.....	41,975,627
On 2,157,366 double centners of candies at 10.65 marks.....	22,975,948
On 94,917 double centners of crushed sugar at 10 marks.....	949,170
	<hr/> 65,900,745
	12,699,570
Managing expenses at 4 per cent.....	3,144,013
Net receipts from the material tax.....	9,555,557
Net receipts from the consumption tax.....	50,814,291
Total income.....	<hr/> 60,369,848

The present bounty, or profit, accruing to the manufacturers is conceded to be about 2.12 marks per 100 kilograms. During the last year it is estimated that the Government suffered a net loss of 16,000,000 marks.

PROJECTED CORRECTIVE LEGISLATION.

To correct permanently this condition of affairs the Reichstag has now under consideration a measure which proposes to abolish altogether the old material tax, or weight duty, and with it the system of rebates. The con-

sumption tax is increased to an amount which is considered equivalent to the present weight and consumption duty. Though the rebate is withdrawn, all sugar intended for export is exempt. During the year 1889-'90 about 4,400,000 double centners of sugar entered into the home consumption. This is considered as a normal yearly consumption in the German sugar-taxing districts. Without regard to the natural increase of the population or the increase of consumption per head, it is believed that an average yearly consumption of 4,500,000 double centners can be reckoned upon in the near future. This amount of sugar, taxed at 22 marks per double centner, would give an annual return of about 99,000,000 marks, which, after deducting the necessary collecting expenses, would leave to the imperial treasury a clear total of about 95,000,000 marks, as against about 60,000,000 marks under the present arrangement. Such a showing, it is argued, could not be brought about by adhering to the present system.

ARGUMENT FOR AND AGAINST THE NEW METHOD OF TAXATION.

In support of this innovation it is urged that the expenses of the Empire have increased to a very great degree during the past few years and that it can be predicted with certainty that they will continue to increase. This is due, first of all and chiefly, to the enormous military outlay for the improvement of the national defenses. As secondary causes, the new pension insurance law and the increases granted to the various states for their own purposes are mentioned. The present income is inadequate to meet these growing demands, and other and more profitable sources of taxation must be found. The proposed law does not contemplate any added burden, but simply the doing away of the bounty as such.

On the other hand, the combined sugar interest is unanimous in strenuous opposition to the new measure. It is maintained that the present duty is indispensable to a successful competition with foreign producers, notably the French, who are at present receiving decided Government encouragement. It is pointed out that the French premium amounts to 7.50 francs for every 100 kilograms, the Austrian to 3.20 marks, and the German only to 2.12 marks. This, in United States currency, would be as \$1.45, 75 cents, and 50 cents, respectively. Moreover, the Austrians have the additional advantage of buying at paper and selling at gold value. The complaint is also made that during the last year German sugar was constantly underbid in the London market by French and Belgian sellers.

If this condition of things actually exists, it will deal a severe blow to the German export trade, which is estimated, in round numbers, to equal three-fifths of the entire production. Of this England takes a good share. Out of 601,681 tons of sugar, molasses, and sirup exported in 1888, England received 274,277 tons. This is about five and a half times the quantity sent to any other one country.

The United States, according to the German official figures, received a relatively small amount. It is to be said, however, that this amount has

been rapidly increasing of late; indeed, the increase during this last year was the most striking feature of our sugar importation. It was nearly three times as much as the year previous and made Germany second only to Cuba as our source of supply. The value of the sugar received by the United States from the most important sugar centers for the fiscal year ended June 30, 1890, was as follows:

Country.	Value.	Percentage.
Cuba.....	\$39,099,670	38.61
Germany.....	16,098,224	15.90
Hawaiian Islands.....	11,559,142	11.42
British West Indies.....	8,910,130	8.80
Philippine Islands.....	6,817,866	6.73
British Guiana.....	4,325,370	4.27
Porto Rico.....	3,681,247	3.81
Dutch East Indies.....	2,722,320	2.69
San Domingo.....	1,715,460	1.70
Brazil.....	1,659,251	1.64
Austria-Hungary.....	1,578,494	1.56

The value of the sugar exported by Germany to the United States in 1887-'88 and in 1888-'89 was \$1,321,516 and \$5,814,407, respectively.

Aside from the alarm expressed by the exporters for the security of foreign trade, there is the cry of the manufacturers that the abolishing of the material tax will disastrously affect the quality of the beets. Attention is called to the French experience. It is further claimed that the burden of the new law will fall most heavily upon the agricultural and laboring classes. In order to compete at all under the new conditions, the cost of production must be lowered. Therefore, the farmer will have to accept a lower scale of prices for his beets and the wage earner for his wages.

RECENT FRENCH LEGISLATION AND THE M'KINLEY BILL.

It is interesting to note, in connection with this agitation, a recent petition forwarded to Chancellor von Caprivi in the name of the Association for the Beet Root Sugar Industry of the German Empire. It bears the date of November 7, 1890. After reciting the objections which have already been alluded to in this report, it proceeds to consider two other dangers which have lately arisen. One is the hostile French legislation of July and August of the present year; the other is the McKinley bill. By the former the duty on all foreign sugar is raised and German molasses is shut out altogether from the French markets. As to the recent tariff legislation in the United States, the prediction is made that, under the bounty system and with the aid of improved machinery, Florida and Louisiana will be able to produce nearly 500,000 tons of sugar. Moreover, the fear is expressed that what is known as the reciprocity clause may work serious harm to the German sugar interests. In the language of the petition, this "falls all the harder upon our manufacturers, because under former laws they had always reckoned upon a good market in the United States." The recent interest taken in the

United States in the growing of the beet root is another disquieting feature. The report continues :

It is not doubted that a country with such enormous plains can cultivate beets. Even in Germany, with the light of our present experience, we are not now so particular as regards the soil and climate for beet cultivation.

CONCLUSION.

What effect this opposition will have upon the Reichstag is not yet apparent. The whole course of legislation of late years, though, leaves no doubt that the Government is in earnest in its endeavor to suppress premiums. It is safe to predict that such suppression can not be much longer delayed.

Several tables are here annexed. In Table A it is instructive to note that, while the quantity of beets annually worked up is now triple the amount so employed in 1871-'72, the number of factories has only slightly increased, showing a great increase of capacity, due in a large measure to the substitution of the diffusion process. The apparent discrepancy in the amount of income received into the imperial treasury, as shown in Table B and as elsewhere given for the last five years, may be explained by the fact that Table B takes into account the amount of duty received from imported sugar and the rebate afterwards granted.

TABLE A. — *Production and use of beets.*

Year.	Number of factories in operation.	Quantity of beets used.	Raw sugar of all sorts.	Molasses.	Quantity of raw sugar extracted from 100 kilograms of taxed beets.
		<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Kilograms.</i>
1871-'72.....	311	2,250,918	186,422	63,892	8.28
1872-'73.....	324	3,181,551	262,551	91,589	8.25
1873-'74.....	337	3,528,764	291,041	105,818	8.25
1874-'75.....	333	2,756,745	256,412	97,603	9.30
1875-'76.....	332	4,161,284	358,048	133,952	8.60
1876-'77.....	328	3,550,037	289,423	111,101	8.15
1877-'78.....	329	4,090,968	378,009	122,813	9.24
1878-'79.....	324	4,628,748	426,155	133,652	9.21
1879-'80.....	328	4,805,262	409,415	131,371	8.52
1880-'81.....	333	6,322,203	555,915	164,984	8.79
1881-'82.....	343	6,291,948	599,722	150,813	9.56
1882-'83.....	358	8,747,154	831,995	196,305	9.51
1883-'84.....	376	8,918,130	940,109	207,978	10.54
1884-'85.....	408	10,402,688	1,123,030	259,700	10.79
1885-'86.....	399	7,070,317	808,105	180,178	11.43
1886-'87.....	401	8,306,671	985,628	215,887	11.87
1887-'88.....	391	9,963,961	910,698	183,037	13.08
1888-'89.....	396	7,896,183	944,505	201,189	11.96

TABLE A.—*Production and use of beets—Continued.*

Year.	Quantity of beets re- quired to produce 1 kilogram of raw sugar.	Quantity of beets raised by factory owners.	Quantity of beets culti- vated by fac- tory owners.	Quantity produced per hectare.
	<i>Kilograms.</i>	<i>Tons.</i>	<i>Hectares.</i>	<i>100 kilos.</i>
1871-'72.....	12. 07	1,504,351	73,690	204
1872-'73.....	12. 12	2,101,301	82,590	254
1873-'74.....	12. 12	2,420,909	88,877	272
1874-'75.....	10. 75	1,908,095	92,655	206
1875-'76.....	11. 62	2,836,307	96,724	293
1876-'77.....	12. 27	2,490,154	98,725	252
1877-'78.....	10. 82	2,872,775	104,783	274
1878-'79.....	10. 86	3,114,030	107,679	289
1879-'80.....	11. 74	2,850,586	113,003	252
1880-'81.....	11. 37	3,871,679	118,431	227
1881-'82.....	10. 46	3,431,754	121,256	283
1882-'83.....	10. 51	4,448,632	129,262	344
1883-'84.....	9. 49	4,205,064	140,843	299
1884-'85.....	9. 26	4,936,246	150,077	329
1885-'86.....	8. 75	4,199,047	138,869	302
1886-'87.....	8. 43	4,436,084	147,782	300
1887-'88.....	7. 65	3,797,652	143,853	264
1888-'89.....	8. 36	4,209,942	149,411	282

TABLE B.—*Taxes and rebates in the German customs territory.*

Year.	Total receipts, including amount from import duty.	Tax rebates.	Net receipts.	Per head of population.
	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>
1844-'45 to 1849-'50.....	20,457,800	2,578,400	17,879,400	0. 61
1850-'51 to 1855.....	21,129,600	2,212,900	18,906,700	0. 57
1856 to 1860.....	27,374,300	1,368,900	26,005,400	0. 78
1861 to 1865.....	32,708,800	864,200	31,844,600	0. 90
1866 to 1870.....	39,537,400	4,198,500	35,338,900	0. 94
1871-'72 to 1875-'76.....	58,872,500	4,159,000	54,713,500	1. 32
1876-'77.....	60,154,500	11,618,200	48,536,300	1. 13
1877-'78.....	67,824,600	18,009,100	49,815,500	1. 15
1878-'79.....	76,171,800	25,627,100	50,544,700	1. 15
1879-'80.....	78,605,000	24,399,500	54,205,500	1. 22
1880-'81.....	102,645,000	56,496,500	46,148,500	1. 12
1881-'82.....	101,869,200	44,992,200	56,877,000	1. 26
1882-'83.....	141,684,600	74,397,700	67,286,900	1. 49
1883-'84.....	144,090,600	96,302,300	47,788,300	1. 05
1884-'85.....	167,821,600	128,452,700	39,368,900	0. 86
1885-'86.....	114,559,800	90,067,600	24,492,200	0. 53
1886-'87.....	142,445,200	108,821,000	33,624,200	0. 72
1887-'88.....	120,245,300	105,568,000	14,677,300	0. 31
1888-'89.....	110,171,100	80,076,100	30,095,000	0. 62

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UNITED STATES COMMERCIAL AGENCY,
Magdeburg, December 27, 1890.

GAME PRESERVATION IN GERMANY.

REPORT BY CONSUL-GENERAL MASON, OF FRANKFORT.

Observant Americans, traveling by rail through Germany during the late summer or autumn months, are often astonished by the abundance of hares, partridges, and pheasants, which are to be seen in the fields and thickets along the railways, or by roebuck—from two to a dozen or more together—feeding in pastures and meadows and scurrying into the adjacent woods on approach of the train. This surprise is usually augmented when, at some country station, the traveler sees a party of sportsmen returning to town with the proceeds of a day's shooting. Remembering the denuded condition of the older and more thickly settled portions of our own country in all that respects field and woodland game, the impression is apt to come home to the transatlantic tourist that in this respect at least the Germans manage better than we have done. In fish culture and the skillful breeding of many kinds of animals the Americans are unsurpassed, if equaled, by any people of Europe; but in making marketable game a plentiful product of fields that have been cultivated since many centuries before America was discovered the Germans have, it would seem, set an example which we may study with interest, if not profit.

It is proposed in the present report to consider the German system of game protection and management from a purely economic stand-point. Aside from all consideration of shooting as a fascinating, healthful sport for men who are ordinarily confined to the wear and fatigue of city life, there is the practical question whether the growth of wild game may not, under proper conditions, be made to add in America, as it does so largely in Europe, to the annual cash product of fields and woodlands, even in the most thickly settled States and in the vicinity of large cities.

It was but natural that a people busy with the task of clearing and settling a country so vast as ours should, until within recent years, have regarded game birds and animals as part of the spontaneous product of the land, the property of whoever might take the trouble to pursue and kill them. Not within many centuries has any such easy-going indifference on that subject prevailed in these older nations of Europe. From the days when the game belonged to the Crown and hunting was the exclusive privilege of the king and the nobility, game birds and animals have been recognized as property not less tangible and defensible than domestic poultry or cattle.

With the imperial preserves of Germany and the vast estates of the wealthier aristocracy, where stags and pheasants are reared and tended by liveried gamekeepers for wholesale slaughter on princely hunting days, the present report has, for obvious reasons, no concern. All that belongs to a social and political condition so remote from our own as to divest it of all practical interest in this connection. But the imperial and grand ducal preserves cover but a small proportion of German territory. The vast bulk of

it is possessed by individual farmers and communes, and is leased, so far as shooting privileges are concerned, to individuals or small clubs of professional and business men in the neighboring towns and cities for an annual rental, which amounts in the aggregate to many millions of marks and constitutes one of the important revenues of the agricultural class. In no respect are the provincial governments of Germany more jealous of national interference than in regard to their game laws. Prussia, Bavaria, Hesse, Württemberg, and Baden have each their separate code for the protection of game and the regulation of shooting privileges; but, as it will be impossible to consider them all within reasonable space, we may fairly select as an example the code of Prussia, which is as fair and intelligently framed as any, and will serve to illustrate the system which has proved so successful and advantageous in this country.

One of the important provisions of the Prussian code is that which permits any proprietor of landed property to kill game at proper seasons in any part of his premises that may be inclosed by a fence or wall, but which denies him this privilege on any piece of uninclosed land which is less than 200 acres in extent. In the latter case the game on the farmer's land reverts to the care of the commune in which he lives, which rents the shooting privileges of all such territory within its limits, crediting to each farmer his due share of the aggregate rental, proportionate to the area of his land.

As nearly all farming lands in Germany are owned in small tracts by peasant farmers who live in villages, and as such lands are rarely or never inclosed by any semblance of hedge or fence, it follows that most field shooting is leased by the communal authorities at prices which vary from 20 to 75 cents per acre annually, thus adding an additional crop, so to speak, to the yearly product of the ground. These shooting privileges are leased usually for terms of six, nine, or twelve years. Competition is by auction at the office of the communal burgomaster, and the lease goes to the highest bidder who can furnish satisfactory guaranties as to financial responsibility. The lessee then becomes responsible, not only for the proper care of the game in the fields and woods covered by his lease, but also for whatever damage the game may inflict upon growing crops. Should the hares injure the beets and turnips or the deer from the adjacent forest trespass upon the wheat or rye fields, the farmer summons the two communal assessors appointed for that purpose, who examine the premises and estimate the amount of damage, which the lessee of the shooting is required to pay. If he finds the tax excessive, he may nominate a third member of the board and call for a reappraisement of the damage. The lessee also employs a local gamekeeper, who earns a yearly salary ranging from \$200 to \$300, and whose business it is to look after the game, kill foxes, hawks, and other carnivorous creatures, and prevent poaching.

Nothing could better illustrate the universal respect for the rights of property in this country and the absence of that lawless, predatory spirit which pervades some less strictly governed communities than the entire im-

munity from irregular depredations which is secured to partridges, pheasants, hares, rabbits, and other small game, even in the immediate neighborhood of populous German villages. The peasant farmer is satisfied with a system which secures to him a full cash value for all the game which his land may produce, as well as prompt payment for whatever damage the same may inflict upon his crops, and at the same time protects his fields from trespass by unauthorized persons or at seasons when the grain and grass might be injured thereby, for the game laws carefully prohibit field shooting until such crops are gathered.

An important feature of the protective system is the law which forbids any person from hunting or using a gun unless he is provided with the legal *Jagdpass*, or license. This license is issued by the local magistrate in each district to applicants of good standing, who must be not less than eighteen years of age, and, if under twenty-one years, must be vouched for by some responsible person. The pass is for one year, costs from 75 cents to \$3, according to the varying regulations of the different provinces, and bears on its reverse side a checkered design showing the open and close months of the year for each kind of game. To be found outside of one's own premises with a rifle or fowling-piece and without a *Jagdpass* involves the confiscation of gun and accouterments. This arrangement effectually eliminates the professional poacher and the predatory small boy with the cheap shot-gun, who have been so destructive to singing birds, as well as to furred and feathered game, in some other countries.

GAME BIRDS AND ANIMALS OF GERMANY.

These include, principally, the stag, the fallow deer and roedeer, hares and rabbits; the capercaillie (or *Auerhahn*), pheasants, partridges, snipe, woodcock, wild ducks and swans, and several other varieties of birds, not to speak of fish otters, foxes, and badgers, which are killed for their fur or because they are destructive to fish and smaller game.

Keeping still in view the economic aspects of the subject, the practical question would be, which of these varieties might be most easily transplanted to the thickly settled portions of the United States and grown there under conditions similar to those which exist in Germany. The climate of this country does not differ essentially from that of the Northern and Middle States of our Republic. With the exception that the proportion of woodland to open fields is larger with us than here, and that the American farmer keeps his land inclosed by fences and lives on it instead of in a neighboring village, the principal conditions are nearly similar. The proportion of pasture and meadow to plowed land is greater in most American districts than in Germany, but this would be to the advantage of the game rather than otherwise. In most States of the Union the laws distinctly recognize the right of the landowner to the game birds and animals on his property and enable him to defend that right against trespass. There would seem to be no reason why at least four of the species which are now grown so abundantly for sport and

profit in Germany should not be at least equally successful in almost any part of the United States. These are the pheasant, the gray partridge, the hare, and the roedeer, all of which live and thrive in proximity to man and may be easily transferred to any locality suitable to their existence.

The gray partridge (*Rebhuhn*) of northern Europe is in size about midway between the quail and prairie-chicken of the United States, the former of which he strongly resembles in appearance and disposition. Although less beautiful than the red-legged partridge of southern Europe, he is not less "gamey" in the field or delicious on the table, his flesh resembling strongly that of our native quail. This species lives in the open fields and meadows of Germany, even close to the villages and farm-houses, and subsists at all times upon food precisely similar to that of the American quail and prairie-chicken. The female lays in May or early June from sixteen to twenty eggs, and, if foxes, weasels, or cold, protracted rains destroy her young brood, she makes another effort and brings forth her second hatching in July. The partridge-shooting season begins in Prussia on the 1st of September, by which time the young birds, except those of the second hatchings above noted, are well feathered, strong on the wing, and nearly full grown. Each brood forms a covey, and, like the prairie-chicken, they are at first tame and comparatively easy shooting, but with experience and the advancing season they become wilder and stronger; so that, although they are always "game" and lie well to a dog, particularly when approached from leeward, they are in later October and November sufficiently difficult to satisfy the most exacting sportsman. Partridges sell in the market at from 50 to 75 cents each, and, although killed in immense numbers, are always in demand. It is no unusual thing in this region to kill during a season two or three hundred birds on a farm not exceeding 150 acres in extent, and there are several preserves in the open fields along the Rhine between Mayence and Mannheim, where the average annual score exceeds a thousand.

It is, of course, quite at variance with American or English ideas for a sportsman to sell his game or consider in any way its market value, but in Germany no such squeamishness prevails. The product of each day's hunt, except what the master wants for his own use or chooses to present to friends, goes to the game dealer, who has a standing contract with the sportsman to take his entire product at prices agreed upon in advance, and which are rigidly adhered to.

Until within a few years most sportsmen who leased shootings in this part of Germany could pay their rent and hire of gamekeeper, and even save a profit, from the proceeds of their game. This enabled many men of limited means to lease lands which would have been quite beyond the reach of their unaided private incomes, and thus practically the whole territory—woods, field, marsh, and mountain—was then, as now, leased for shooting purposes. But, with the rapid increase of wealth and the growth of the class of men able to afford the luxury of hunting, the competition for the best grounds has become so sharp that the rental has advanced enormously within

a short period, so that comparatively few shooting leases are now self-supporting, that is, paying by sales of game the cost of rent, gamekeeper, and damage by game to growing crops. Many shooting privileges in this region which were leased at auction during the past year have brought three times the rental of the previous lease made six years ago, and some communes now pay their local and national taxes from the revenues thus easily obtained. When it is considered how burdensome taxation has become to the German peasantry, the advantage of being able to pay this obligation in hares, partridges, and pheasants grown spontaneously on their lands will be at once apparent.

The pheasant of Germany is identical with that of England, France, and Austria, and is an exotic in Europe, having been brought many centuries ago from its native haunts in the Himalayan districts of India, by way of Asia-Minor, into European Turkey, Austria, and particularly Bohemia, where it is now found wild in immense numbers. The pheasant is a showy bird, of moderate merit for the table, except as an ornament, but nevertheless much esteemed for its beauty and for the easy, comfortable shooting that it affords. Pheasants are easily bred in this region from birds or eggs obtained from Bohemia, where the females cost from \$1.75 to \$2 each, the cocks, in the proportion of one to eight or ten hens, costing somewhat less.

Any person who has a few acres of thick wood with underbrush or open thicket sufficiently tall to furnish good cover has the necessary conditions for growing pheasants, which subsist on wild berries, buds, and the grain that they pick up in the adjoining fields. During hard winters, when the snows lie long and deep on the ground, careful sportsmen keep their pheasants within limits by feeding them grain; but there is in this part of Germany, so far as can be learned, none of that wholesale growing of pheasants in parks like chickens, that is so common and so costly on the great manorial estates of England.

The cock pheasant may be lawfully shot in Prussia during the whole year, except June, July, and August, the female only from the 1st of September until the end of January. In most preserves the hen pheasants are rarely or never killed unless the stock becomes too numerous, which it may easily do unless the birds are preyed upon by foxes, hawks, and weasels, which are the persistent enemies of game in the most parts of Germany. For this reason foxes, cats, and even stray dogs found at large upon land rented for shooting purposes may be, and usually are, killed at sight. Aside from its natural enemies, the pheasant is a prosperous and prolific bird, and there would seem to be no reason why it should not thrive abundantly in almost every part of the United States. Birds and eggs for breeding purposes may be obtained in almost any quantity from dealers in Bohemia; but, as the demand is considerable from France, England, and western Germany, it is often requisite to give the order some weeks in advance of the laying season, which is in April and May.

The roedeer is the smallest and most nearly domesticated of the three species of deer which inhabit Germany. It is likewise the most beautiful, and its flesh is the daintiest venison known to the epicure. In color, form, grace, and fleetness it resembles more nearly the antelope than other species of deer. It lives abundantly throughout the forests of central Europe, but prefers thickets of underbrush in the vicinity of open fields and meadows to the darker and denser woods which form the haunts of the stag and fallow deer. It is this tractable, half-domesticated disposition, its willingness to live in close proximity to the homes of men, that makes the roedeer the valuable game animal that it is. It is no unusual circumstance to find from six to a dozen of these shy, graceful creatures living in a piece of woodland less than 30 acres in extent, and they are so abundant in this region that hunting parties frequently kill in a single day within 10 miles of Frankfort anywhere from ten to forty of them. The roebuck may be killed throughout the year, except during March and April; but the doe is protected by law ten months out of twelve, and may be shot only from the 15th of October to the 15th of December. The buck sheds his horns in December, and from that time until May looks so much like a doe that he is comparatively safe from sportsmen; but in the early summer he is again in season, and until September, when the stag and the partridge shooting begins, he has the hunters practically to himself. Roedeer which live in the neighborhood of cultivated fields often inflict damage upon the growing wheat and rye; but this the thrifty peasant takes immediate note of, and, under the law already noted, assesses the damage upon the lessee of the shooting title. For this reason some of the best hunting leases command but a small rental, and I know of one instance in which a sportsman pays only 150 marks (\$35.70) per annum for the rent of nearly a thousand acres, but distributes each year from \$1,000 to \$1,200 among the neighboring peasants for the damage done to their crops by his hares and deer. This occurs generally in districts where the proportion of wooded land to arable fields is but small; but the law which holds the game proprietor responsible for its depredations is an eminently just one, and takes from the farmer all temptation to destroy the game in self-defense.

But the plain, reliable, every-day game of the average German sportsman is the hare. It resembles in appearance the brown American rabbit, but is much larger, and its flesh decidedly superior; moreover, the hare, unlike the rabbit, never burrows, but lives wholly above ground, inhabiting the bleak fields in winter, with no other lair or shelter than a small open hollow scooped out beside a protecting clod or stone. More rarely the hare inhabits thickets and small woodlands adjacent to farms, but in deep, dark woods he is seldom found, and never in any great numbers. But in the open fields of southern and western Germany the hare swarms in such profusion as to form one of the definite products of the land. Although not entitled to high rank as game, either for the table or the sportsman, the hare is a coveted luxury to the poor and middle classes, and in some markets, notably that of Paris, is

always in demand. At the same time it offers to the sportsmen a pot shot sufficiently attractive to amuse the most competent, and not so difficult as to discourage the inexperienced, gunner.

The mother hare bears annually two, sometimes three, litters of from eight to a dozen leverets, which, although decimated by cold, wet weather and preyed upon by foxes, hawks, and other enemies, still make a brave struggle for life; so that by September, when the shooting season begins, they are as plentiful as field-mice. Except for the few that are shot during the partridge hunting, hares are not killed to any great extent until December, when the great *Battues*, or drive hunts, are made, which supply the winter market. Although much less destructive to gardens and young trees than our rabbit, the hare is so prolific that, unless kept in check by judicious hunting, he might soon become a source of anxiety to the farmer. In view of this, the law provides that the lessee of field shooting in Prussia shall drive hunt the entire area of his lease not less than once in each year. Accordingly, the whole agricultural territory must be shot over by the *Treibjagd* process annually, and the operation is often repeated when the first hunt has left too large a surplus of hares for the next year's breeding. Drive hunting for hares is not, perhaps, an exalted form of sport, but it is always sociable and jolly and has the further advantage that it gets the hares.

For a well-organized hunt of this kind from fifteen to thirty sportsmen are requisite, with twice as many men and boys from the neighboring villages, who are marshaled by the gamekeeper to serve as beaters to drive the game. The fields or woods are then taken by sections as large as the line of hunters and drivers can surround, and, although with skillful shooting more or less game always gets through the line and escapes, the slaughter is often enormous. It is no uncommon occurrence for a party like this to kill in a short winter day upon 300 or 400 acres of wheat and beet fields within half an hour's drive of Frankfort from 400 to 500 hares. As they average in winter about 8 pounds in weight, the result of such a day's shooting would be nearly or quite 2 tons of game, a quantity which it would be, of course, impossible to dispose of otherwise than by sale. Game killed in such quantities must either be sold or wasted, and in this country, where waste is considered sinful, the hares or deer or partridges, as the case may be, are turned over to the game dealer, who during the season loads daily a special car for the Paris market. The game dealer pays from 50 to 75 cents each for hares in Germany; they retail for from 5. to 7 francs in Paris. The French capital pays yearly millions of francs for game brought from beyond the Rhine. By the sale of his game the lessee of shooting grounds recoups, more or less fully, his expenditures for rent and keepers, and the money goes finally to the peasant or landed proprietor upon whose premises it was grown. From the beginning of the hunting season until the end of December, 1890, there have been killed in Prussia alone, according to official statistics, 2,500,000 hares, which, at 2.50 marks each, the usual wholesale price, represent an income of 6,250,000 marks, or nearly \$1,500,000.

The invitations which are exchanged between sportsmen to make up the number of guns requisite for a drive hunt constitute an important form of social courtesy in Germany. The entertainment always includes a midday breakfast, more or less luxuriantly served at the tavern in the nearest village or upon tables spread in the woods by servants, who bring warm dishes, wines, etc., from the home of the host in the city.

Such, in substance, is the German system. Could it be introduced successfully and profitably in the United States, and, if so, would such introduction prove desirable? Competent judges who have given the subject careful thought answer both these questions in the affirmative, and say that the game laws of several Northern and Eastern States are already adequate to render the raising of game in the woods and fields of ordinary farms sufficiently secure to insure a successful result. A system which would add an additional crop to the farmer's fields and forests, and thereby increase substantially his cash income from his land, would certainly not lack support from the agricultural majority which controls most State legislatures.

There are, of course, many questions of detail which such an experiment would involve, and into which it is impossible at present to enter; but, after all that has been so successfully done in our country to restock the inland lakes and streams with fish, there ought to be some way of restoring in a measure the game birds and animals which were formerly so abundant and which have become, through indiscriminate shooting, so rare to the sportsmen, so costly in our markets. This can only be done by making game preservation easy, inexpensive, and withal profitable to owners of the land. The German system has made game abundant throughout the Empire, and yields an important income to the class which is in most need of it.

The experiment in America would need to be systematic, but not necessarily expensive. A dozen pairs of partridges, pheasants, and hares, imported from Germany or Austria, turned loose on almost any American farm and protected from molestation three or four years, would multiply so that they would thereafter hold their own against any reasonable and sportsman-like pursuit. The larger the territory included in such experiment, the more certain would be its success. There is the disastrous experience of Australia with the English rabbit, which might make some American farmers timid about introducing the hare; but it must be remembered that the European hare is a very different animal from the rabbit of either Australia or America. Besides being far less destructive and prolific than the rabbit, the hare does not burrow, and, being, therefore, always above ground and accessible, its numbers can be easily kept within safe and reasonable limits.

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL;
Frankfort, January 3, 1891.

LINSEED IN THE ARGENTINE REPUBLIC.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

The flax industry in this country is only a very recent branch of its agriculture. It is only within the last few years, indeed, that it has had any development at all, and as yet there is very little to be said about it.

A COMPARATIVELY NEW INDUSTRY.

As late as 1877 the custom-house returns do not show that a pound of the seed had ever been shipped from any Argentine port. In 1878 the exports amounted to 35 tons; in 1880 the amount shipped had increased to 958 tons; in 1881 it was 6,394 tons; in 1882 it was 18,644 tons; and in 1883 it was 23,061 tons. About this time, owing to the steady foreign demand and the good prices which were obtained for the seed, a very general interest was manifested, not merely in the production of the linseed for foreign consumption, but also in the preparation of the fiber. Since then, with the advent of agricultural laborers from Europe, there has been a gradual increase in the breadth of land under this crop, the yield of which is variously stated to be from 20 to 40 for 1, and for which the country seems to be very well adapted.

The range of the exports of linseed since 1883 will be seen from the following table:

Year.	Quantity.	Year.	Quantity.
	<i>Tons.</i>		<i>Tons.</i>
1884.....	33,991	1888.....	40,222
1885.....	69,426	1889.....	28,195
1886.....	37,689	1890 (9 months).....	30,542
1887.....	81,204		

BREADTH OF LAND IN FLAX CULTIVATION.

The cultivation of linseed, however, is as yet almost exclusively confined to the provinces of Santa Fé and Buenos Ayres, though a little is now also grown in the province of Entre Rios. In 1881 the amount of land under flax cultivation was as follows, in hectares: Province of Buenos Ayres, 29,192; province of Santa Fé, 6,122; total, 36,314. In 1889 the breadth of land under this crop was as follows, in hectares: Province of Buenos Ayres, 43,899; province of Santa Fé, 73,009; province of Entre Rios, 4,161; province of Rioja, 34; total, 121,103. As the total area of land under crop cultivation in the Argentine Republic is 2,422,995 hectares, it appears that the amount at present put down in flax is only about 5 per cent. of the whole.

AMOUNT OF THE HARVEST.

I am unable to answer your inquiry as to the total amount of flax produced in the Argentine Republic. There is no way of obtaining the information, as the Argentine Government has no provision for crop reports. We can only estimate, and it is estimated that the harvest in the province of Santa Fé last year amounted to 56,887 tons, while that of Buenos Ayres was about 25,000 tons; total crop, say, 100,000 tons, including Entre Rios. In regard to the approaching harvest, it is stated that the acreage is larger than ever before, and, unless some misfortune overtakes the crop, the yield will show a very considerable increase over that of any previous year.

THE COMING CROP.

What the shipments will be, however, will depend a good deal on the price abroad, for there is now an annually increasing home market for the crop, as several oil-mills have recently been established in the country, and great hopes are entertained that the production of linseed-oils will henceforth be added to the category of national industries.

DESTINATION OF CROP.

The next crop will be harvested and ready for shipment about the 1st of March, and the business will probably run through the quarter ending June 30, 1891. The shipments will all go forward either from this port or Rosario. It is not possible to say whither the crop will be exported, but, as a general indication of the direction it will take, I give the following destinations which the shipments of 1888 and 1889, according to the custom-house returns, appear to have had:

Destination.	1888.	1889.
	<i>Kilograms.</i>	<i>Kilograms.</i>
Germany.....	1,805,604	1,792,338
Belgium.....	3,490,721	2,623,180
Brazil.....	114,575	826,100
United States.....	2,123,470	6,755,263
France.....	4,917,427	2,134,329
Italy.....	121,061	1,422,525
Holland.....		322,790
Great Britain.....	27,650,030	12,289,203
Uruguay.....		10,088
Total.....	46,222,888	28,195,816

MARKET VALUE.

The price of linseed in this market during the last year, according to the returns of the Buenos Ayres Bolsa, ranged as follows: January 1 to March 31, 57 to 70 cents; April 1 to June 30, 45 to 65 cents; July 1 to September 30, 45 to 75 cents; October 1 to December 31, 60 to 80 cents, in current money per 10 kilograms. So far during the present year there has been a slight increase in the price.

CONDITIONS OF FLAX CULTIVATION.

As to the mode of cultivation here, I am but indifferently posted; but, if it differs at all from that employed in the United States, it is certainly not for the better. I assume this to be so for the reason that no crops in this country receive that care and attention which good husbandry exacts. I may add that the crop is not a favorite one, although it is believed to pay well, for the reason that it is thought that the cultivation very rapidly exhausts the land, so that most of the production is by those who do not own, but only rent, their farms.

It is only necessary to add, in regard to soil and climate, that flaxseed culture is exactly under the same conditions as that of wheat or corn.

E. L. BAKER,
Consul.

UNITED STATES CONSULATE,

Buenos Ayres, November 20, 1890.

THE WINE INDUSTRY OF RUSSIA.

TRANSMITTED BY MR. WURTZ, SECRETARY OF LEGATION, ST. PETERSBURG.

[From statistics supplied by the Russian Government.—Translation.]

Of all the plants cultivated in the southernmost zone of Russia, the vine is incontestably the most important. Cultivated since the highest antiquity in certain localities of the south, it grows in a wild state in the countries bordering on Asia, on the southern slope of the Caucasus. There, in the damp and warm valley of the Rion and its neighborhood, the vine attains prodigious dimensions, and its branches, embracing, like ivy, the trees, produces without the least cultivation fruit in abundance. From the ancient Colchide, which, according to all appearances, is the native country (*patrie*) of the vine, it has spread in times beyond the memory of man over all the shores of the Mediterranean to the mountains of central Asia on the east, and gradually, but already as a cultivated plant, advanced to the north far from its home.

In Russia the northern limit of the cultivation of the vine has not yet been definitely fixed. It is certain that it is spreading, though slowly, more and more to the north. It crosses the southern region of the governments (provinces) of the basin of the Vistula, of the government of Minsk (near Pinsk), passes to the south of Chernigov towards Koorsk, Voronezh, Borissoglebsk, Saratov, and crosses the Ural in the environs of Gouriev. Nevertheless, under exceptionally favorable conditions and by assiduous care the vine can bear ripe fruit much further to the north than the limit indicated; for example, in the environs of Riga, in Courland, and even in the district of St. Petersburg. In Asiatic Russia the northern limit of the vine crosses the basin of Turkestan, the province of Semiretchinsk, and the basin of the Amoor, where a particular species of vine grows (*Vitis amurensis*). As to the northern limit of the cultivation of the vine for the industry of wine making, it extends from Mochelev, on the Dniester ($48^{\circ} 27'$), above the Schpola, government of Kiev (49°), to the north of the governments of Kherson and Yekaterinoslav, crosses the Don ($48^{\circ} 35'$), passes over the Volga at Sarepta ($48^{\circ} 31'$), and inclines to the south at the opening of the Ural.

The vertical extent of the culture of the vine is very vast. In Bessarabia vineyards are found at 1,110 feet above the level of the sea; in the Crimea, at a height of 1,000 feet; in Turkestan (at Samarcand) the vine prospers at 2,340 feet; and, finally, in certain localities of the Transcaucasus (province of Kars) the grape ripens at 4,500 feet of altitude. The viticultural countries of Russia may be grouped in the following regions: (1) Region of Bessara-

bia, (2) region of the Crimea, (3) region of the Don, (4) region of Astrakhan Ural, (5) region of the Caucasus, and (6) region of Turkestan.

I. REGION OF BESSARABIA.

This wine-growing country embraces all of Bessarabia, the districts of Tiraspol and of Odessa, of the government of Kherson, the districts of Olgopol and of Yampol, of the government of Podolia, as also of some parts of that of Yekaterinoslav, that is, the districts of Yekaterinoslav and of Novomoskovsk. The planting of the vine in Bessarabia is attributed to the Greek colonists, who established themselves there two or three centuries before the Christian era, and to the Genoese, who founded their colonies on the northern border of the Black Sea in the eleventh and twelfth centuries. Later the Turks also planted numerous vineyards in the southern part of Bessarabia. In the governments of Podolia and Kherson the cultivation of the vine dates only from last century and in that of Yekaterinoslav it is quite recent. At present, from the data furnished, there are in Bessarabia about 60,000 deciatines* of vineyards spread over districts in the following manner:

District.	Area.	District.	Area.
	<i>Deciatines.</i>		<i>Deciatines.</i>
Kishenev.....	15,952	Soroka.....	615
Beñder.....	8,000	Akkerman.....	20,000
Bietsy.....	1,763	Ismail.....	9,500
Chotyn.....	100	Total.....	60,330
Orkhei.....	4,400		

The government of Kherson possesses 3,581 deciatines of vineyard, of which the district of Tiraspol counts 2,601 deciatines and that of Odessa 980 deciatines. The government of Podolia (principally the districts of Olgopol and Yampol) has 400 deciatines of vineyards; that of Yekaterinoslav has but little over 200 deciatines. Thus the total wine-growing country of Bessarabia is about 64,500 deciatines. It should, however, be pointed out that the planting of the vine is extending more and more. The situation and exposure of the vineyards is very varied. In Bessarabia (in the southern parts) and on the inundated shores of the Dniester they occupy the plains; in the northern and central parts, the slopes to the north and northeast. In the governments of Podolia and Kherson they grow almost exclusively on the southern slopes and to the southwest. The plants are cut long or short, the medium length rarely. In winter the plants cut long are buried under the ground; those cut short remain on the level with the ground or only their trunk is buried. In the viticultural region of Bessarabia there is a numerous variety of plants; nevertheless, the plants of the country predominate, excepting in certain localities of the government of Kherson, where foreign plants are specially cultivated—Riesling, Gutedler, Traminer, Chasselas. Among the local varieties the most common are Poma Plavae, Poma Galbina, Tita Caprei, Poma Negra Rara, Poma Negra Batuta, etc. In the number of diseases which attack the vine in the wine-growing region of Bessarabia are to be mentioned: *Phytoptus vitis*, *Erysiphe* (oidium) *tuckeri*, *Peronospora viticola*, and *Phylloxera vastatrix*, in places in the districts of Orkhei and of Kishenev. The treatment of the cryptogamic diseases of the vine is not made anywhere. The plants infected by the phylloxera are radically destroyed. The product of the vineyards is very varied; it depends upon the care given in the cultivation, on the situation, on the exposure of the vineyards, or also on meteorological causes, and on the diseases. The mean product in Bessarabia is 200 vedros† per deciatine; in the government of Kherson, 300 vedros; and in Podolia, 175 vedros. The production of wine in the viticultural region of Bessarabia is very considerable; it has tripled in the last ten years.

* 1 deciatine = 2.697 acres.

† 1 vedro = 3.249 gallons.

At the present time the total production of wine in Bessarabia reaches 11,250,000 vedros, spread over the districts as follows:

District.	Product.	District.	Product.
	<i>Vedros.</i>		<i>Vedros.</i>
Kishenev.....	3,190,400	Soroka.....	92,250
Bender.....	1,600,000	Akkerman.....	3,000,000
Bielsky.....	352,600	Ismail.....	1,900,000
Chotyn.....	15,000	Total.....	11,250,000
Orkhei.....	1,100,000		

In the government of Kherson the production of wine is:

	<i>Vedros.</i>
District of Tiraspol.....	780,000
District of Odessa.....	100,000
Total.....	880,000

The production of wine in the government of Podolia is estimated at 70,000 vedros; that of Yekaterinoslav, at 10,000 vedros. The production of wine in the viticultural region of Bessarabia reaches yearly 12,270,000 vedros, that is to say, to almost half of the total production of wine in Russia. As to quality, the wines of the viticultural region of Bessarabia are very inferior to the renowned growths of the Crimean and of the Caucasus. They are acid, watery, only slightly alcoholic, and little apt to improve by barreling (*cuvage*). That is caused by the defective method of cultivation of the vines, as also of the methods of preparation and conservation of the wines. There are, nevertheless, in the southern part of Bessarabia wines of the district of Akkerman which can rival the best growth of the Crimea.

The following table furnishes the results obtained from the analysis of the wines of Bessarabia:

Description.	Red wine.	White wine.
	<i>Per cent.</i>	<i>Per cent.</i>
Density.....	0.9941	0.9922
Volume of alcohol:		
Minimum.....	8.24	10.08
Maximum.....	13.15	12.47
Medium.....	11.2	11.61
Weight of alcohol (medium).....	8.79	9.47
Total acidity:		
Minimum.....	0.315	0.407
Maximum.....	0.796	0.662
Medium.....	0.544	0.577
Extract:		
Minimum.....	1.826	1.812
Maximum.....	3.12	2.154
Medium.....	2.266	1.614
Glycerine (medium).....	0.329	0.437
Sugar (medium).....	0.387	.....
Tannin (medium).....	0.209	.....
Volatile acids (medium).....	0.14	0.092
Succinic acid (medium).....	0.06	0.08
Tartaric acid (medium).....	0.188	0.162
Azote (medium).....	0.031	0.024
Ashes (medium).....	0.199	0.175

A large portion of the wine is sold at once after its preparation, either as must or as new wine. There are few wine-growers who keep their wine for a whole year and still fewer who.

let it rest longer. Fifteen per cent. of the total production is consumed by the wine-growers themselves. Of the 85 per cent. for sale, one-quarter is consumed on the spot; the remainder is exported to the governments of the center, of the north, and of the west of Russia. The price of the wine, on account of the inferiority of its quality, is low; it varies according to its age. New wine of the peasants is sold at from 40 copecks to 1.50 rubles per vedro (the ruble is equal to about 55 American cents); that of the better class (*propriétaires*), from 80 copecks to 1.50 rubles. The price of a vedro of wine from three to five years old is from 2 to 6 rubles and even reaches sometimes as high as 10 rubles. A deciatine (*arpent*) of vineyard badly kept gives a net profit of from 25 to 50 rubles, and brings in as much as 200 rubles and more to the proprietors who cultivate their vineyards better.

2. REGION OF THE CRIMEA.

The wine-bearing region of the Crimea comprises the government of Taurida, of which the most important wine-growing centers are found in the peninsula of that name. While the continental districts of viticulture and of wine making are still of recent date, the quantity of wine there produced is quite considerable. On the southern coast of the Crimea one still meets in inaccessible places the vine in its wild state, so that it is difficult to say whether the first wine-growers found it as it is or whether it was brought from the transcaucasian provinces. At all events, admitting this last supposition, the planting of the vine must have taken place at a very remote period. According to the most ancient information gathered relative to viticulture in the Crimea, it is known that the Greeks cultivated the vine in their colonies, and that later they were supplanted in these places by the Italians. At the time of the Tartar domination viticulture and wine making fell into decadence, but since the last century—that is, since the annexation of Taurida to Russia—these branches of industry have rapidly developed. One can judge of this readily by the following figures representing the production of the vineyards of Taurida: In 1823 the vineyards produced 143,432 vedros of wine; in 1833, 200,000 vedros; in 1849, 652,370 vedros; in 1870, 934,000 vedros; and to-day the production of wine in the Crimea exceeds 1,000,000 vedros a year. At the present time the vineyards of Taurida cover an extent of 6,548 deciatines, distributed as follows by districts:

District.	Area.	District.	Area.
	<i>Deciatines.</i>		<i>Deciatines.</i>
Yalta.....	1,500	Melitopol.....	244
Theodosia.....	2,117	Perekop.....	} 30
Simferopol.....	1,400	Eupatoria.....	
Dnloper.....	92	Total.....	6,548
Berdiansk.....	1,165		

Thus the vineyards in the viticultural region of the Crimea occupy a surface of about 6,550 deciatines, a figure much less, doubtless, than the reality, in view of the ever-increasing number of new plantations, especially in the continental districts of Taurida. In the flat countries of the Crimea the vine is planted in regular rows; on the steep slopes, in terraces generally exposed to the south, southeast, and southwest. In Bessarabia the vines are frequently mingled with fruit-bearing trees, whereas in the Crimea they present uninterrupted expanses of about 50 deciatines. On the southern coast of the Crimea 9,600 plants per deciatine are counted; at Theodosia, from 600 to 10,000; at Simferopol, from 2,400 to 4,800.

The number of varieties of vine (*cépages*) cultivated in the Crimea is very great. No less than six hundred may be counted, most of which have been imported from France, Italy, Spain, and other viticultural countries of Europe, as also from America and the Cape. There is no considerable extent planted with one kind alone; in general, the vineyards are composed of every kind of vine, so that in the fabrication of certain wines as many as fifteen kinds of grapes are used. It is easily understood that this state of things is little favorable to the production of typical wines of the Crimea. The most common vines are:

Red.—Albournah (Crimea), Alcatice Nero, Alma Ouzum, Alicante, Carbinet Sauvignon, Franc Pinot, Gros Gamay, Saperair (Caucasus), Grenache, Malhec, Traminer.

White.—Albillo de Huebla, Blanc Sémillon, Chasselas de Fontainebleau, Clairette, Gamay White, Pinot White, Riesling, etc.

Among the most common diseases of the vine are: *Erysiphe* (oidium) *tuckeri*, *Sphaceloma ampelinum*, *Peronospora viticola*, *Coccus vitis*, and *Phylloxera vastatrix*. Sulphur is employed in combating the oidium in most of the vineyards on the southern coast; the other diseases are generally left without treatment. The vines affected by the phylloxera are destroyed. In the continental districts and in those of Simferopol and Eupatoria the plants are covered with earth during the winter, while in the others the vines remain exposed.

The total production of the vineyards of the viticultural region of the Crimea is distributed by districts as follows (approximative figures):

District.	Production.	District.	Production.
	<i>Vedros.</i>		<i>Vedros.</i>
Yalta.....	300,000	Melitopol.....	16,500
Theodosia.....	600,000	Perekop.....	} 4,000
Simferopol.....	350,000	Eupatoria.....	
Dnieper.....	9,000	Total.....	1,369,500
Berdiansk.....	90,000		

The above figures must be less than the real production, in view of the continued planting of new vineyards and the extension of the old ones. The medium production annually of the vineyards of the Crimea is not fixed; it depends upon climatic causes, on the vines, and the care bestowed upon the cultivation. The best crops are given by the thinly planted plantations in the fields well watered, while the vintages are less in the vineyards where the vines are close together and badly irrigated.

The only precise data of the annual production are of the vineyards situated on the southern slope of the Crimea. In 1884 the production per deciatine was valued at 110.8 vedros; in 1885, at 117 vedros; in 1886, at 159 vedros; in 1887, at 70.3 vedros; and in 1888, at 147 vedros. The production of the vineyards of the other localities of the Crimea is much greater; at Soudak, for instance, the deciatine gives from 300 to 500 vedros.

Although among the viticultural regions of Russia the Crimea enjoys exceptionally favorable conditions, viticulture and wine making leave much to be desired. Alongside of the great proprietors, who have brought the viticultural industry to perfection as regards care of cultivation and methods of wine making, one sees wine-growers engaged in this branch of rural economy in the most defective manner, who make acid, watery, and rough (*âpres*) wines. The best growths of the Crimea are the great wines like liqueurs or cordials (*grands vins liqueureux*), which keep perfectly and improve with time, but their production is of small amount. The other wines of the Crimea are generally made with the grapes from foreign vines, and resemble the product of the same plants, at the same time containing more alcohol, sugar, and less of acidity, which one must attribute to the more southern position of the Crimea. The red wines of the Crimea are generally wanting in perfume (bouquet). This is remedied by mixing with them some white wine rich in perfume. Besides this, all the red wines are distinguished by a strong roughness (*aputé*), which must be attributed to the defective fabrication and care given to them. With age they acquire softness and fineness. The best wines of the Crimea are those of the district of Yalta or of the southern coast; they are of easy conservation, strong, thick, and aromatic. Then immediately after come the wines of the district of Theodosia, where, by reason of the irrigation (*arrosage*) of the vineyards, they are more watery, lighter, and somewhat more acid. Finally, the third rank for these viticultural products is held by the districts of Eupatoria, Berdiansk, of the Dnieper, Melitopol, and Simferopol. The wines of the last district are superior to the others.

The following table supplies information on the composition of the wines of the Crimea:

Description.	Southern coast.			The valleys, district of Theodosia.		
	Red wines.	White wines.	Dessert wines.	Red wines.	White wines.	Dessert wines.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Density	0.9939	0.9927	1.04	0.9964	0.9939	1.039
Alcohol:						
Volume—						
Minimum	10.76	11.93	10.53	10.31	9.08	.....
Maximum	14.32	16.93	15.29	11.94	14.61	.....
Medium	13.3	14.35	12.98	11.19	11.88	15.53
Weight of alcohol (medium)	16.71	11.86	11.03	8.93	9.54	12.14
Total acidity:						
Minimum	0.35	0.322	0.33	0.58	0.525	.....
Maximum	0.735	0.642	0.732	0.72	0.854	.....
Medium	0.621	0.492	0.493	0.638	0.61	0.567
Extract:						
Minimum	2.765	7.353	10.7	1.569	1.773	.....
Maximum	3.08	4.515	21.58	3.49	3.4	.....
Medium	2.761	2.569	14.925	2.409	2.317	5.54
Glycerine (medium)	0.638	0.589	0.232	0.324	0.51	0.505
Sugar (medium)		1.223	6.554			3.234
Tannin (medium)	0.272			0.143		
Volatile acids (medium)	0.142	0.1	0.111	0.174	0.174	0.66
Succinic acid (medium)	0.112	0.119		0.065	0.085	0.101
Tartaric acid (medium)	0.182	0.165	0.053	0.18	0.118	0.041
Azote (medium)	0.034	0.026	0.017	0.028	0.029	0.022
Ashes (medium)	0.267	0.204	0.426	0.217	0.22	0.314

The price of the Crimean wines, on account of the superiority of their quality, is higher than that of the wines of Bessarabia. The dearest wines are those of the southern coast, for which the price per vedro in 1884 was 4.09 rubles; in 1885, 4.60 rubles; in 1886, 5.87 rubles; in 1887, 5.76 rubles; and in 1888, 5.57 rubles. The price of wine at Theodosia varies from 1.50 to 4.50 rubles per vedro and in the other districts from 1 to 2 rubles. Ninety per cent. of the total production of the wine of the viticultural region of the Crimea is put on sale; 10 per cent. only is used on the spot. The commercial region for the sale of the wines of the Crimea is very vast; it comprises all of European Russia and even a part of Siberia. The net profit of a deciatine of vineyard in the Crimea varies from 150 to 500 rubles.

3. REGION OF THE DON.

The viticultural region of the Don comprises the vineyards situated principally in the first and second districts of the Don, on the land of the Cossacks of the Don; in the other districts (Donets, Tcherkask and Oust-Medvieditza) the vines occupy only a limited space.

The origin of viticulture in the basin of the Don is lost in antiquity; possibly the first plantations were made by the Greeks and Genoese. With time viticulture on the Don fell so low that it required an edict of the Emperor Peter the Great to restore it to vitality. By this edict vines from France and Astrakhan were ordered to be brought for planting in the environs of the towns of Timliansk and Razdorsk, which are still to-day the great centers of the viticultural industry of the Don. Up to the end of the last century this branch of rural economy developed very slowly, but since has made rapid progress; for since the year 1820 the wine of the Don had taken so great an extension that it was sold, not only in the center, but even in the north, of Russia. The severe winters without snow of 1847 and 1848 destroyed more than three-fourths of the vineyards of this region. Then the drought of the summer following and the rivalry of the wines of the Crimea struck a terrible blow at the viticultural industry of

this country. But since then the vineyards have multiplied and the production of wine has sensibly increased.

At present, according to the returns of 1884, one can count 8,115 vineyards, extending over 2,440 deciatines, distributed by districts as follows:

Districts.	Number.	Districts.	Number.
The Don:		Donets.....	74
First district.....	6,123	Tcherkask.....	49
Second district.....	1,609	Mlousk.....	7
Oust-Medveditza.....	153	Total.....	8,115
Khoper.....	100		

The vineyards of this region cover the sides of the hills exposed to the south, to the south-west, and southeast, and follow the right bank of the Don. The vines are planted in certain places in regular rows, but generally they are dispersed here and there without order or method, and thus form enormous bushes. The cultivated varieties are not many; almost all are of the degenerated kinds of plants imported from France and Astrakhan and have lost their ancient names. The most common vines at present are: Of the white, Ladanny, Blanc Rond, White of Tsyenlsansk, Poukhlakofsky; of the red, Black Vinny, Kransnostopy, etc. Diseases of the vine are almost unknown. The methods of wine making in the viticultural region of the Don are almost everywhere very imperfect; the same may be said of the care and the conservation of the wine, which is almost nothing. Therefore, the quality of the wine of the Don leaves much to be desired.

It is difficult to determine exactly the quantity of wine produced in this region on account of the lack of precise information; as much as 500,000 poods* are gathered, of which one-tenth is sold for the table at Moscow, Voronezh, and Rostoff, on the Don. An equal quantity is consumed on the spot, and only 60 to 75 per cent. is used for wine making. One may say that the viticultural region of the Don produces no less than 200,000 vedros annually. It is thus seen that the wines of this region occupy one of the lowest grades among Russian wines; they contain little alcohol, are watery, and soon deteriorate. At the same time it is difficult to judge of the natural qualities of the wines of the Don in view of the falsification of the greatest part of them in changing them into sparkling drinks by the saturation of the wine by means of carbonic acid.

The wines of this region are sold soon after the casking, and a wine of three or four years of age is a great rarity.

The following table presents to us the composition of the medium wines of the Don:

Description.	Red wines.	White wines.
	<i>Per cent.</i>	<i>Per cent.</i>
Density.....	1.278	1.052
Alcohol:		
Volume.....	8.06	9.65
Weight.....	5.02	7.3
Total acidity.....	0.34	0.585
Extract.....	8.333	1.64
Glycerine.....	0.25	0.312
Sugar.....	7.26	8.26
Tannin.....	0.186	.....
Volatile acids.....	0.024	0.131
Succinic acid.....	0.05	0.062
Tartaric acid.....	0.129	0.071
Azote.....	0.011	.....
Ashes.....	0.14	0.25

*1 pood=36.07 pounds.

The prices of the wine are varied. Ordinary wines bring from 1.30 to 2 rubles per vedro; those of Tsimliansk reach sometimes 10 rubles. The market for the wines of the Don is somewhat limited; it comprises the southeast of Russia and certain governments of the center. They are little known in the north of Russia.

4. REGION OF ASTRAKHAN URAL.

The viticultural region of Astrakhan Ural comprises the southern part of the government of Astrakhan and the neighboring territory of the mouth of the Ural. There is no precise information concerning viticulture in this latter region. It is known only that there are vineyards at the mouth of the Ural, the production of which is insignificant. Information on the situation at present of viticulture in the government of Astrakhan is also far from being complete. The first plantations of the vine date from the sixteenth century, the first wines being brought from the Transcaucasus, from the town of Shamaka, by Persian merchants.

The most flourishing period of viticulture in Astrakhan coincides with the end of last century and the beginning of this; then, besides a mass of varieties of table grapes, some 50,000 vedros of wine were produced annually. The frosts of 1803 were the first blow to the vineyards; then came competition and the want of water for the irrigation of the vineyards. Such are the causes of the decay of the viticultural industry of Astrakhan. At present the cultivation of the vine and the production of wine are insignificant. Almost all the vineyards of this region are in the environs of the city of Astrakhan, on the southern slopes of the hills, and are watered by the Volga and its affluents. A great number of vines are cultivated which have long since degenerated, and bear local names. It is difficult to estimate the extent of the vineyards of Astrakhan at more than 100 deciatines, producing about 200,000 pounds of grapes. One-tenth of the crop is used for the fabrication of wine; the rest is sold for the table in the governments situated on the Volga, and even at Moscow and St. Petersburg. According to the returns for 1870, the government (province) produced about 1,500 vedros of wine; for 1880 the sum of 30,000 rubles was derived from them; which leads to the supposition that the quantity of wine produced must have amounted at the minimum to 100,000 vedros.

5. REGION OF THE CAUCASUS.

The origin of viticulture in the Caucasian countries goes back to antiquity. Every thing indicates that it dates from the establishment of the first inhabitants in those localities, where the vine grows in a wild state. The viticultural region of the Caucasus comprises the vast territory extending between the Cavity Kouma-Manitch on the north and the frontier line which separates Russia from Turkey and Persia on the south; consequently, all the Caucasian governments. By the quality, as by the quantity, the viticultural region of the Caucasus occupies the first rank in Russia; but the rational methods of viticulture are still very little known in the Caucasus. Except in a limited number of plantations, where the cultivation of the vine and the preparation and preservation of the wines are carried out according to regular usage, many vineyards are seen where the same operations are performed as primitively and as defectively as two thousand years ago. The extent of vineyards in the Caucasus is constantly increasing, especially in western Caucasus. The methods for the preparation and preservation of the wines are improving, it is true; but, on the other hand, the vineyards are attacked by a crowd of cryptogamian maladies and by other pests, which annihilate many plantations or render them unproductive, so that the augmentation of the vineyards in filling up the damage caused by these diseases maintains the viticultural production nearly at the same level. The viticultural region of the Caucasus is naturally divided with the northern Caucasus and the Transcaucasus. Northern Caucasus comprises the provinces of Kooban, Terek, Daghestan, and the government of Stavropol; Transcaucasus, the district of the Black Sea, with the section of Sookhoom, the governments of Kootals, Tiflis, Yelisavetpol, Erivan, Bakoo, and the province of Kars.

Province of Kooban.—In this country, with the exception of the peninsula of Taman, where the vine was planted by the Greek colonists before the Christian era, viticulture began

to develop only thirty years ago. The vineyards are chiefly situated on the banks of the Kooban, and, occupying the central part of this province, cover a surface of about 500 deciatines. The vines are rather numerous. Foreign vines are cultivated in profusion, which have been received from the Crimea and from the Don—Malaga, Madelum, Olivette, Silvaner, Chasselas, Franc Pinot, Zante, Pinot Gris, Reisling. Among the diseases are to be mentioned oidium and phylloxera. A deciatine produces 150 pounds of grapes, of which 30 per cent. is used for wine making and the rest is consumed as grapes. The result is, therefore, that the total viticultural production of the province of Kooban reaches little more than 25,000 vedros. The wines are watery, acid, and, in general, of mediocre quality. They are sold in the neighboring towns, at Taganrog and at Rostoff, on the Don.

Government of Stavropol.—In this province the first vineyards date from the end of last century; but their number has considerably increased in this country, and especially these last years. The vineyards cover a total surface of 4,500 deciatines, and lay on the slopes towards the south and southwest of the banks of the Kouma. They are planted with different vines, which are supposed to have come from the Crimea or from the Don. There is little irrigation of the vines, and they are buried in the winter. The crop of a deciatine is estimated at about from 300 to 800 poods of grapes, most of which is employed for wine making, the rest being consumed at the table. The government of Stavropol produces annually 400,000 vedros of wine (principally red), rather weak, rather sour, and of defective preparation. As soon as barreled, it is sent to the fairs of the province of Kooban and of the government of Stavropol. This wine is known under the name of wine of Prascovia, village of the name, a great viticultural center on the Kouma. The price of the wine, on account of its mediocre quality, is low, from 70 copecks to 1 ruble per vedro. A considerable part of the must is destined for the distillation of spirits (*eau de vie*).

Province of Terek.—The planting of the vine in this province goes back to a remote period, but only since the second half of the sixteenth century has any thing been known about it. Viticulture dates from the foundation of the town of Kizliar, which took place towards the middle of last century. The first inhabitants were natives of the transcaucasian provinces. They imported into the province of Terek the vine, which there prospers; the others followed their example in planting vineyards. In the beginning of the present century the viticultural products of their vineyards were so considerable that they sufficed for the consumption of half of Russia. Although at present the production of wine is less, the region of Terek is nevertheless the most important viticultural center of the northern Caucasus. The vineyards of the province of Terek now cover a surface of about 12,000 deciatines, grouped principally in the environs of Kizliar, on the left bank of the Terek; in the province of Kizliar; on the left bank of the Soumji and on the right bank of the Terek, in the district of Grosnzée; and on the plain of the Koumyks, in the district of Kharsouff-Yourt. In winter the plants are almost everywhere covered with earth and abundantly irrigated by canals and by subterranean waters, which are very high near the Terek. Few varieties, principally red, are cultivated—Black Tawlinsky, Karausum, and Incarnot—the most of which, on account of their inferior quality, are destined for the distillation of spirits.

In certain localities European plants are cultivated—Roulender, Pinot Gris, Silvaner, Franc Pinot, etc. As many as 13,000 vines may be counted per deciatine, giving generally more than 350 vedros of must. A third only of the total quantity of the must is employed in the wine making; the other two portions are distilled. From this it results that the viticultural production of the province of Terek is estimated at 2,000,000 vedros. The defective preparation and conservation of the wines, added to the abundant irrigation, have an unfavorable influence upon the quality of the viticultural production of the country. The wines of Terek are watery, lack perfume (bouquet), become tart easily, and can only be kept by adding alcohol thereto. The price of the wines is low. The vedro is worth from 80 copecks to 3 rubles, rarely more. The must destined for distillation is not often sold for more than 30 to 50 copecks per vedro. The wines of this province have a great sale at the fairs in the south of Russia, Nizhnee-Novgorod, and even reach St. Petersburg.

Province of Daghestan.—Although in this province viticulture is said to date a long time back, the planting of the greater part of the vineyards has nevertheless taken place only since the second half of the nineteenth century. The vineyards are scattered in the districts of Temeer-Khan-Shoor, Kaftakh-Tabassaran, Avar, Andi, and on the coast of the Caspian Sea towards Derbend. In the north of the country the vines are buried in winter, whilst in southern Daghestan they remain in the open air. The vines there cultivated are very numerous and principally of local origin, imported from Georgia or Persia. The total surface occupied by the vineyards of the Daghestan is estimated at 3,500 deciatines, the product of which is generally from 350 to 400 pounds of grapes per deciatine. As the majority of the population of this province profess Islamism, two-thirds of the crop are consumed as grapes or destined for the fabrication of drinks particularly known under the names "djaba" and "narbec;" the other third is employed in wine making, and gives about 250,000 vedros of wine. The wine of the country, on account of its bad preparation, is of inferior quality, is tart, and can not be kept. The limit of consumption of the wines of Daghestan is inconsiderable, not extending beyond the shores of the Caspian Sea.

From the foregoing figures it is shown that the extent of the vineyards in north Caucasus can be fixed at 20,500 deciatines, the production of which is about 2,675,000 vedros of wine.

In the Transcaucasus there are two great viticultural centers, the government of Kootais and that of Tiflis. The other localities are of but secondary importance.

Government of Kootais.—The origin of the cultivation of the vine in this government is lost in antiquity, and dates from the establishment of the first inhabitants, who were the most ancient wine-growers of the valley of the Rion, a country so favorable, not only to the prosperity of the vine in its cultivated state, but to the wild vine also. Almost all the government of Kootais presents the appearance of a continuous vineyard, where it is often difficult to distinguish the planted vine from the wild one, as both wind their branches with the trunks of trees and grow without cultivation. The data on the surface covered by the vineyards at present in the government of Kootais are represented by the following figures:

District.	Area.	Districts.	Area.
	<i>Deciatines.</i>		<i>Deciatines.</i>
Kootais.....	7,715	Osourgheti.....	1,240
Scharopan.....	9,290	Ratcha.....	5,154
Senaki.....	974	Total.....	27,993
Zongolidi.....	2,829		
Letzkhoum.....	1,461		

Of these 28,000 deciatines of vineyards, 60 per cent. are planted from arborescent vines, which entwine with the trees (these vineyards are called "maglari"), and about 40 per cent. are of vines on props (*échalassées*) cut relatively short (this sort of vineyard is called "dablari"). Many kinds of vines are cultivated, most of them of local origin; foreign varieties are rather rare. The most common vines to be cited are: Red—Isabella, Crakhuna, Alexandrioula, Sape-rane, Schari-kabistoni, etc.; white—Camuri, Tsalikaouri, Mtsvane, etc. The damp and mild climate of the government of Kootais is not only favorable to viticulture, but, unfortunately, it favors also the development of cryptogamic diseases. The appearance in 1854 of the oidium annihilated almost one-fourth of the vineyards and affected the production of the others. The "maglari" vineyards suffered most. For the last few years the *Peronospora viticola* has been observed, as also the *Sphaceloma ampelinum* and a quantity of other mushroom parasites. Finally, in 1889 a vast extent was found to be invaded by the phylloxera. Treatment of the vine is little used; it is even impossible when the vine climbs on the trunks of trees. The medium product of a deciatine of vineyard in the government of Kootais is about 175 vedros; it is to be observed, however, that the "maglari" vineyards produce little more than 100 vedros (often still less), whilst the "dablari" give from 200 to 350 vedros per deciatine. Thus the

government of Kootais produces annually about 4,900,000 vedros of wine. Notwithstanding the defective preparation and want of care, the wines of this government are distinguished by their strength and fine color. They are of agreeable flavor and generally of satisfactory quality. Country wine is sold at from 1 to 4 rubles per vedro. Seventy-five per cent. of the viticultural production is consumed on the spot; the rest is sold in the Transcaucasus, and even penetrates into European Russia. The most celebrated growths are those of Swiri, Satchkheri, Kharaghoul, Tola, Sadjawakho, etc. In the province of the Black Sea and the district of Sookhoom, countries bordering on the government of Kootais, there are 1,800 deciatines of vineyards, the medium crop of which reaches almost to 75,000 vedros a year.

Government of Tiflis.—The vineyards of the government of Tiflis cover a very considerable extent of ground in almost all the districts, except that of Alchaltzikh. The greatest surface covered by vineyards is in the Kakhetia, in the valley of Alazon (districts of Telav and Signak), where there are as many as 20,000 deciatines. The entire government of Tiflis possesses as many as 29,000 deciatines of vineyards, the annual production of which is about 4,200,000 vedros of wine. Forty per cent. is consumed there; the rest is sold in the Transcaucasus and in the markets of Russia under the name of wine of Kakhetia. The most common among the red wines are Saperavi and Tawkveri; among the whites, Mtvane, Rkatziteli, Mtvivane, etc. Foreign vines are relatively rare. The most common of the diseases of the vine are: *Erysiphe* (oidium) *tuckeri*, *Peronospora viticola*, *Sphaceloma ampelinum*, and even the phylloxera (Tiflis). The principal viticultural centers are at the villages of Monkhrani (district of Donscheta), Bakourtzikhe, Kardanakhi, Tzinondali, Monkouzani, Alchmeti, Kvareli, and Napareonli (Kakhetia).

The wines of all this government, excepting those of Kakhetia, are not of a superior quality on account of the bad methods of making and want of care of the wines. Exceptional qualities are only found when the fabrication has been proceeded with rationally (*monkhrani*) and when wine is kept in cellar several years. Country wine is sold at from 1.20 to 2.40 rubles per vedro. The Kakhetia wines justly merit the renown which proclaims them to be the best wines of the Caucasus. Notwithstanding their preparation, their defective conservation, they are thick, generously spirituous, have perfume, and with age become excellent. The inferior wines of Kakhetia are sold at from 1.50 to 1.80 rubles per vedro; medium quality, from 2 to 2.50 rubles per vedro; and the superior wines, from 3 to 5 rubles and more per vedro.

Government of Eriuan.—The extent of vineyards of this government may be placed at 6,600 deciatines and the viticultural production at 1,000,000 vedros annually. The largest plantations are at Eriuan itself and in the villages of Aschtarak and Vagarschapat. The wines of the country are distinguished by their strength and fineness of perfume; but this is, however, soon lost on account of their defective preparation and conservation. Almost all the wine is consumed in the Transcaucasus, a small portion only being sold in the Russian markets.

Government of Yelisavetpol.—The vineyards of this government cover a surface of 1,600 deciatines, the production of which annually reaches 500,000 vedros of wine. The chief viticultural centers are those of Yelisavetpol and the German colonies Helenendorf and Katerinenfeld. The red wines pass for the best; they are distinguished by their strength and dark color. The wine of the country sells for 1.50 to 2.60 rubles per vedro.

Government of Bakoo.—It is calculated that the vineyards of this government extend over 1,700 deciatines, the production of which is 500,000 vedros of wine yearly. The viticultural industry is centralized principally near the villages of Kurdamir and Matrassy. The wines of the country are strong and a little acid. They sell at from 90 copecks to 2 rubles per vedro. Besides the localities mentioned above, there are vineyards also in the districts of the Transcaucasus of Zakataly, Batoom, and Artveen (government of Kootais), and in the province of Kars. They cover about 2,000 deciatines, producing 20,000 vedros per year. Thus the total surface of the vineyards of the Transcaucasus may be calculated at 70,700 deciatines, producing annually about 11,195,000 vedros of wine.

The following table furnishes the results of the analysis of the wines of the Caucasus:

Description.	Red wines.	White wines.
	<i>Per cent.</i>	<i>Per cent.</i>
Density.....	0.9962	0.9953
Alcohol:		
Volume—		
Minimum.....	7.8	12.45
Maximum.....	14.99	14.57
Medium.....	11.92	13.18
Weight (medium).....	9.04	10.43
Total acidity:		
Minimum.....	0.388	0.326
Maximum.....	0.602	0.497
Medium.....	0.434	0.414
Extract:		
Minimum.....	2.028	2.29
Maximum.....	3.229	3.841
Medium.....	2.745	2.977
Glycerine (medium).....	0.449	0.519
Tannin (medium).....	0.507	
Volatile acids (medium).....	0.047	0.135
Succinic acid (medium).....	0.089	0.121
Tartaric acid (medium).....	0.13	0.122
Azote (medium).....	0.046	0.026
Ashes (medium).....	0.265	0.246

6. REGION OF THE TURKESTAN.

Viticulture in Turkestan dates from the most remote period, but the production of wine has been developed only since the establishment there of the Russians. It is calculated that the vineyards cover an extent of 4,000 deciatines. Most of the crop is consumed as table grapes or as raisins; a small portion only is destined for wine making. Vines of the country are generally the only ones cultivated. From 300 to 400 poods per deciatine are produced. The quantity of wine produced in the country, principally at Tashkend, is about 20,000 vedros a year. The wine of Tashkend is distinguished by the abundance of its extract and mineral substances. Some of it is consumed on the spot; the rest is sent to Moscow and St. Petersburg.

In making the total estimates of the extent of the vineyards and of the quantity of wine produced in the different viticultural regions of Russia we obtain the following figures:

Viticultural regions.	Extent of vineyards.	Quantity of wine produced.
	<i>Deciatines.</i>	<i>Vedros.</i>
Bessarabia.....	64,500	12,210,000
Crimea.....	6,550	1,370,000
Don.....	2,440	200,000
Astrakhan-Ural.....	100	10,000
Caucasus.....	91,200	13,870,000
Turkestan.....	4,000	20,000
Total.....	168,790	27,680,000

The exportation of Russian wines is still in its infancy. It is made principally from the ports of the Black Sea and over the frontier of Finland.

In the last four years Russian wines were exported abroad for the following sums:

	Rubles.
1885.....	71,538
1886.....	142,763
1887.....	196,267
1888.....	185,532

Taking into consideration that in Russia the quantity of vineyards is all the time increasing, and that till now only about 3 to 5 per cent. of the land adapted to the cultivation of the vine is occupied by vineyards, it is to be hoped that in the near future Russia will not only produce sufficient for her own consumption, but also export a considerable quantity of her viticultural products abroad.

AMERICAN LARD IN VENEZUELA.

REPORT BY CONSUL PLUMACHER, OF MARACAIBO.

I inclose a cutting and translation from the *Fonografo*, a leading journal of this city, respecting the inferior quality of the lard introduced from the United States.

I regret to be obliged to state that for the most part these complaints are but too well founded, and not only in the case of lard, but also respecting butter. There is not so much said, however, about the latter article, as large quantities are also imported from Europe, the best from Denmark, while the trade in foreign lard is entirely monopolized by American exporters.

In previous dispatches I have pointed out the very short-sightedness of our merchants in sending to this country alimentary products of bad quality; but no notice was apparently taken of my recommendations, and to-day American so-called butter is notorious in Venezuela for its absolute worthlessness.

The quality of the lard can be judged of by the inclosed article. Kerosene, imported from abroad, is also an American monopoly; but by far the greater part is unfit for use, and in more advanced countries its sale would, perhaps, be prohibited by law. I have frequently dwelt upon this important subject, and again recommend strongly to our exporters to cease this system of consigning to these countries products which not only are of most inferior quality, but which are even injurious and dangerous.

E. H. PLUMACHER,

Consul.

UNITED STATES CONSULATE,

Maracaibo, December 10, 1890.

AMERICAN LARD.

[Inclosure in Consul Plumacher's report.—Translated from the *Maracaibo Fonografo*.]

On account of the breaking out at La Guayra of typhoid fever among several persons who had eaten American canned goods, and for other reasons, the *Diario* of that city publishes the following:

"Experience is teaching us that what, generally speaking, arrives here under the name of lard neither is the genuine article nor ever will be. Are the North American manufacturers responsible for the multitude of phenomena which take place in the human economy on account of impure alimentation?"

"In part, yes; and, partly, no. Cheap lard is ordered—the cheapest that can be obtained—and an article is sent which is worth but from 4 to 5 cents a pound, thus forming a great business for those who find themselves protected by the severe laws of their country.

"Let us, then, search for a method by which we may escape being poisoned. Let the authorities, as is their duty, order an examination of all lard introduced and condemn what is bad, imposing, at the same time, heavy fines upon the importers and publishing the names of the manufacturers. If we can not secure good foreign lard, let us consume the native article."

The *Voz Publica*, of Valencia, referring to the remarks of the *La Guayra* colleague, adds the following:

"We do not oppose the opinion of our esteemed colleague of *La Guayra* respecting the scientific examination of the lard, but we think it better that our Government place a virtually prohibitive duty upon this article. Thus Venezuela would be freed from this danger, and at the same time the breeding of swine would be greatly encouraged.

"Many may say that in that case the price of lard would be increased; but even this would be better than to have the health of the country endangered.

"Let the Government examine the American lard and its introduction would be at once surely prohibited."

SWINE IMPORTS INTO GERMANY.

REPORT BY CONSUL-GENERAL EDWARDS, OF BERLIN.

I have the honor to herewith submit a statistical statement showing the importations of swine into the German Empire during the period from January 1 to October 1, 1890.

Table showing the importation of swine into Germany from January 1 to October 1, 1890.

Whence imported.	Hogs.	Young pigs.
	<i>Number.</i>	<i>Number.</i>
Parts of Germany not in the customs union.....	4	23
Belgium.....	17,314	40,530
Denmark.....	61,596	.....
France.....	27,760	10,205
Great Britain.....	8,975	.....
Italy.....	19,824	1,357
Netherlands.....	125,954	156,803
Austria.....	76,350	141
Russia.....	628	98
Switzerland.....	1,533	8,910
British India.....	.....	1
United States.....	1	.....
All other countries.....	1	.....
Total.....	339,940	212,062

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, November 13, 1890.

LABOR IN AUSTRALASIA.

REPORT BY CONSUL GRIFFIN, OF SYDNEY.

The various labor organizations in Australasia have for some time past been violently opposed to the introduction of labor from foreign countries. At first the opposition was confined to the Chinese and coolie race, but it now appears to have extended to all classes of immigrants.

During the term of office of Governor Bourke the Government adopted a policy of assisted immigration, and, although the policy was of much benefit to the colonies, the pressure was so great against it that it had to be discontinued. This subject, however, was treated at length in my report on immigration into New South Wales, published in the *CONSULAR REPORTS*. It was held by the workmen here that immigration reduced the demand for labor, and consequently lessened materially the rate of wages, which for many years has been at exceptionally high rates. The cost of living should, however, be taken into consideration, for nearly all kinds of food supplies and house rent are far more expensive than in the United States.

There has practically been no importation of labor into Australia during the last few years. The arrivals in New South Wales during the year 1889 were simply the arrivals from the other Australasian colonies—and not from foreign countries—who came here in the hopes of bettering their condition. The total number of arrivals seawards into the colony in 1889 was 64,197, of whom 44,348 were males and 19,849 females. The total number of departures was 43,557, of whom 29,789 were males and 13,768 were females. It will be seen that the excess of arrivals over departures was 20,640; excess of males, 14,559; of females, 6,081. These arrivals and departures should be considered apart from ordinary immigrants in search of homes or places of settlement, as very little encouragement is now given that class of settlers. All the governments of the Australasian colonies have ceased to assist immigration. Besides, the labor organizations in the colonies have issued manifestoes declaring immigration to be opposed to the best interests of the community, as it has a lowering effect upon the rates of wages. There is, however, strong reason to believe that the introduction of foreign labor would promote many industries which have been allowed to languish through the want of skilled labor. For instance, Australia, which is one of the finest grape-producing countries in the world, actually makes less wine than she made fifteen years ago. There is no prejudice in any of the colonies against foreigners. In fact, the laws are exceedingly favorable to them, for any foreign-born citizen residing here for a period of six months can become naturalized and partake of all the rights and privileges of native-born citizens. In most of the colonies aliens may acquire real and personal property, devise and bequeath it, in the same manner as if they were British subjects. Nevertheless, the foreign-born population is very small; indeed, about 97 per cent.

of the inhabitants of the whole of Australasia are either of British or colonial origin. In Victoria, the population of which ranges next to that of New South Wales, only 112 persons were naturalized during 1889 and only 4,368 from 1871 to 1888, a period of seventeen years, and of this number 2,969 were Chinese, 720 Germans, 65 French, 38 Italian, and the remainder consisted of Russian, Spanish, and other nationalities. In 1889, in Victoria, the excess of arrivals over departures was only 9,484. Mr. Henry H. Hayter, Government statist of that colony, in commenting upon the above fact, says that, while the excess of arrivals over departures was small as compared with that of 1888, the falling off is explained by large numbers having been attracted to the Melbourne International Exhibition during the latter year.

I am indebted to Mr. Hayter for the following table, showing the net immigration from or to different countries for each year from 1881 to 1889, inclusive:

Year.	Immigration into, in excess of emigration from—						Emigration to, in excess of immigration from, New South Wales and Queensland.	Net immigration.
	New South Wales and Queensland.	South and Western Australia.	Tasmania.	New Zealand.	United Kingdom.	Foreign countries.		
1881.....		192	2,868	1,272	3,960	954	1,924	7,322
1882.....		2,929	3,455	165	6,708	607	2,978	10,880
1883.....		2,362	4,500	407	10,276	926	7,441	11,030
1884.....		768	5,332	796	9,863	1,029	3,647	14,141
1885.....		6,136	5,076	1,628	8,875	759	7,492	14,982
1886.....		7,248	5,556	2,694	11,722	2,561	4,479	25,302
1887.....	939	3,991	3,106	1,538	8,813	3,639	.....	22,026
1888.....	10,517	3,402	8,649	8,475	9,894	866	.....	41,803
1889.....		507	5,259	361	10,287	9	259	16,164
Total.....		27,535	43,801	17,336	80,392	11,350	16,764	163,650

It will be seen from the above table that in the entire period Victoria lost 16,764 persons to New South Wales and Queensland, but gained 88,672 from the other Australasian colonies. The net gain from her neighbors was thus 71,908.

In regard to assisted immigrants to Victoria, in the twelve years from 1871 to 1882 there were 5,547 persons who had free or partially paid passages granted to them. Of these, 3,212, or 58 per cent., arrived in the first year; 5,168, or 98 per cent., in the first three years of the period alluded to. The number then declined rapidly from year to year. Since 1879 only 379 such immigrants arrived; in 1880 there were only 5; in 1881 there was not a single arrival, and only 2 in 1882; and since then no free or assisted immigrants have been introduced by the state.

The subjoined table was prepared by Mr. T. A. Coghlan, the Government statist for New South Wales.

Table showing rate of wages paid in New South Wales during each year from 1830 to 1889.

Year.	Mechanics, per day.	Farm and other labor- ers, per annum.*	Female servants, per annum.*
1830.....	\$1. 58		
1833.....	1. 58	\$27. 59	\$58. 39
1836.....	1. 68		
1839.....	1. 74		
1840.....	1. 98		
1841.....	2. 10		
1842.....	1. 98	106. 92	68. 12
1843.....	1. 44	106. 92	58. 39
1844.....	. 96	72. 90	58. 39
1845.....	. 96	87. 48	77. 86
1846.....	1. 26	97. 32	77. 86
1847.....	1. 34	111. 92	87. 59
1848.....	1. 28	102. 18	77. 86
1849.....	1. 14	85. 16	58. 39
1850.....	1. 08	85. 16	63. 74
1851.....	1. 62	97. 32	77. 86
1852.....	2. 16	131. 87	82. 72
1853.....	3. 82	136. 73	87. 59
1854.....	4. 14	150. 33	131. 87
1855.....	3. 84	170. 31	111. 92
1856.....	3. 02	170. 31	107. 05
1857.....	3. 02	170. 31	107. 05
1858.....	2. 52	194. 64	121. 66
1859.....	2. 40	170. 31	107. 05
1860.....	2. 16	170. 31	102. 18
1861.....	2. 52	170. 31	107. 05
1862.....	2. 58	170. 31	121. 66
1863.....	2. 36	156. 01	121. 66
1864.....	2. 24	140. 94	121. 66
1865.....	2. 24	140. 94	111. 92
1866.....	2. 24	140. 94	111. 92
1867.....	2. 24	140. 94	111. 92
1868.....	2. 24	140. 94	136. 25
1869.....	2. 04	151. 87	126. 53
1870.....	2. 28	156. 00	136. 25
1871.....	2. 34	136. 25	111. 92
1872.....	2. 58	156. 20	126. 53
1873.....	2. 40	156. 20	136. 25
1874.....	2. 46	156. 20	136. 25
1875.....	2. 46	156. 20	155. 71
1876.....	2. 46	156. 20	155. 71
1877.....	2. 52	194. 64	155. 71
1878.....	2. 52	194. 64	155. 71
1879.....	2. 52	180. 53	155. 71
1880.....	2. 40	180. 53	155. 71
1881.....	2. 40	180. 53	170. 31
1882.....	2. 64	226. 76	170. 31
1883.....	2. 64	226. 76	170. 31
1884.....	2. 64	226. 76	170. 31
1885.....	2. 64	226. 76	170. 31
1886.....	2. 40	226. 76	170. 31
1887.....	2. 40	226. 76	165. 44
1888.....	2. 40	226. 76	165. 44
1889.....	2. 40	226. 76	165. 44

* Provided with food and lodging.

The quotations for 1877, 1878, and 1879 were at the same rate, and from 1882 to 1885 the rate advanced to \$2.68 per day, but in 1886 declined to the present scale of \$2.43 per day. A better understanding, however, of the value of the wages paid in New South Wales can be had from the following tables, also prepared by Mr. Coghlan, showing in detail the rate of wages of various trades and the cost of the principal articles of food during the same period:

Table showing rates of wages of various trades, etc., during 1889.

Employment.	Hours of labor.	Wages.	
		£ s. d.	£ s. d.
Black iron workers.....	Per day of 8 hours.....		0 9 0
Blacksmiths.....	.....do.....	0 8 0 to	0 9 0
Blacksmiths' strikers.....	.....do.....	0 6 0 to	0 8 0
Boiler-makers.....	.....do.....	0 9 4 to	0 10 8
Brass finishers.....	.....do.....	0 9 0 to	0 10 0
Coppersmiths.....	.....do.....	0 9 0 to	0 10 0
Corrugated iron workers.....	.....do.....		0 9 0
Engine drivers.....	.....do.....	0 7 0 to	0 8 0
Engine fitters.....	.....do.....	0 9 4 to	0 10 8
Furnace men.....	.....do.....	0 7 0 to	0 8 0
Galvanized iron workers.....	.....do.....		0 9 0
Iron molders.....	.....do.....	0 9 4 to	0 10 8
Laborers in iron trade.....	.....do.....	0 6 0 to	0 8 0
Mill-wrights.....	.....do.....	0 9 4 to	0 10 8
Pattern-makers.....	.....do.....	0 9 4 to	0 10 8
Tinsmiths.....	.....do.....	0 8 0 to	0 10 0
Turners (iron).....	.....do.....	0 9 4 to	0 10 8
Wire workers.....	.....do.....	0 6 0 to	0 10 0
Timber workers :			
Cabinet-makers.....	Per day of 9 hours.....		0 9 0
Carpenters.....	Per day of 8 hours.....	0 10 0 to	0 12 0
Joiners.....	.....do.....	0 10 0 to	0 12 0
Sawyers.....	Per day of 9 hours.....	0 9 0 to	0 10 0
Wood carvers.....	Per day of 8 hours.....		0 8 0
Wood turners.....	.....do.....		0 8 0
Chinese cabinet-makers.....	Per week of 54 hours, with board and lodging.	0 20 0 to	0 40 0
Building trades (general):			
Brick-layers.....	Per day of 8 hours.....		0 11 0
Gas-fitters.....	.....do.....		0 10 0
Laborers (builders).....	.....do.....		0 8 0
Painters.....	.....do.....	0 9 0 to	0 10 0
Plasterers.....	.....do.....	0 10 0 to	0 11 0
Plumbers.....	.....do.....	0 8 0 to	0 10 0
Stone-masons.....	.....do.....		0 11 0
Slaters.....	.....do.....		0 10 0
Leather workers :			
Boot-makers.....	Per week of 50 hours.....	0 45 0 to	0 60 0
Curriers.....	Per week of 54 hours.....		0 45 0
Harness-makers.....	.....do.....		0 45 0
Portmanteau makers.....	.....do.....	0 36 0 to	0 40 0
Saddlers.....	.....do.....	0 40 0 to	0 50 0
Tanners.....	.....do.....		0 45 0
Warehousemen.....	Per week of 50 hours.....		0 57 6
Machinists (female).....	.....do.....	0 20 0 to	0 30 0
Stationery, printing, etc. :			
Book-binders.....	Per day of 8 hours.....	0 8 0 to	0 11 0
Compositors.....	.....do.....		*0 10 0

* Piecework, 1s. 1d. and 1s. 2d. per 1,000; 1s. 8d. per hour overtime.

Table showing rates of wages of various trades, etc., during 1889—Continued.

Employment.	Hours of labor.	Wages.						
Stationery, printing, etc.—Continued.								
Engravers—		£ s. d. £ s. d.						
Metal.....	Per week of 54 hours.....	0	60	0	80	0		
Wood.....	.....do.....	0	50	0	60	0		
Lithographers.....	Per day of 8 hours.....	0	10	0	10	0		
Pressmen.....	.....do.....	0	9	0	10	0		
Stationers.....	.....do.....	0	10	0	10	0		
Stereotypers.....	.....do.....	0	9	0	10	0		
Warehousemen.....	Per week of 48 hours.....	0	60	0	10	0		
Woolen cloth manufactures :								
Foremen.....	Per week of 60 hours.....				0	60	0	
Workmen.....	.....do.....				0	40	0	
Juniors.....	.....do.....				0	30	0	
Mill-wrights.....	.....do.....				0	60	0	
Weavers (female).....	.....do.....				0	25	0	
Girls.....	.....do.....				0	9	0	
Boys.....	.....do.....				0	9	0	
Clothiers :								
Males—								
Cutters.....	Per week of 56 hours.....	5	0	0	8	0	0	
Drapers' assistants.....	Per week of 60 hours.....	2	0	0	5	0	0	
Hatters.....	Per day of 9 hours.....	0	8	0	10	0	0	
Oil-skin makers.....	.....do.....				0	8	0	
Pressers.....	.....do.....				0	10	0	
Shirt cutters.....	Per day of 8 hours.....	0	12	0	20	0	0	
Tailors.....	Per day of 9 hours.....	0	8	0	10	0	0	
Females—								
Dress-makers.....	Per week of 50 hours.....				0	60	0	
Dress-makers' assistants.....	.....do.....	0	15	0	20	0	0	
Milliners.....	.....do.....	0	60	0	80	0	0	
Milliners' assistants.....	.....do.....	0	10	0	20	0	0	
Tailoresses.....	Per day (week of 50 hours).....	0	3	6	10	0	6	0
Improvers.....	.....do.....	0	1	0	10	0	2	0
Food and drink supply :								
Bakers.....	Per week of 50 hours.....	0	55	0	10	0	80	0
Bakers' firemen.....	.....do.....				0	40	0	0
Butchers—								
Slaughtermen.....	Per week of 60 hours.....	0	50	0	10	0	70	0
Shopmen.....	Per week of 70 hours, with board.....	0	30	0	10	0	40	0
Boys.....	Per week of 70 hours, with board and residence.....	0	15	0	10	0	20	0
Confectioners.....	Per week of 48 hours.....				0	50	0	0
Fishermen.....	Per week (no fixed time specified).....	0	20	0	10	0	60	0
Grocers' assistants.....	Per week of 66 hours.....	0	30	0	10	0	40	0
Millers.....	Per week of 60 hours.....				0	80	0	0
Mill hands.....	.....do.....	0	40	0	10	0	50	6
Market gardeners—								
European.....	Per week, with board.....	0	20	0	10	0	40	0
Chinese.....	.....do.....	0	16	0	10	0	20	0
Maritime pursuits :								
Boatswains.....	Per month, 48 hours per week.....				8	0	0	0
Coal trimmers.....	.....do.....				7	0	0	0
Deck hands.....	.....do.....				7	0	0	0
Engineers—								
First.....	Per month (no fixed time specified).....				20	0	0	0
Second.....	.....do.....				16	0	0	0
Firemen.....	Per month, 48 hours per week.....				9	0	0	0
Lumpers.....	Per hour (no fixed time specified).....				0	1	3	0
Constant hands.....	Per week of 60 hours.....				0	50	0	0
Masters and engineers of harbor boats.....	Per week of 90 hours.....				0	55	0	0

Table showing rates of wages of various trades, etc., during 1889—Continued.

Employment.	Hours of labor.	Wages.			
Maritime pursuits—Continued.		<i>£</i>	<i>s.</i>	<i>d.</i>	<i>£</i> <i>s.</i> <i>d.</i>
Sail-makers.....	Per day, 54 hours per week.....				0 10 0
Sailors.....	Per month, 48 hours per week.....				7 0 0
Sea cooks.....	.....do.....	4	0	0 to 12	0 0 0
Wharf laborers.....	Per hour, 48 hours per week.....	0	1	0 to 1	6 0 0
Youths on steamers.....	Per week of 48 hours.....	0	15	0 to 0	22 0 0
Coaching:					
Omnibus men.....	Per week of 70 hours.....	0	36	0 to 0	50 0 0
Omnibus conductors.....	.....do.....	0	15	0 to 0	20 0 0
Dray and trolly men.....	For one horse per week of 70 hours...				0 40 0
Do.....	For every additional horse, 70 hours.....				0 2 6
Drivers (licensed).....	Per week of 70 hours, with board and lodging.				0 20 0
Do.....	Per week of 70 hours, if without board and lodging.				0 36 0
Farriers.....	Per day, 48 hours per week.....	0	8	0 to 0	9 0 0
Grooms.....	Per week of 72 hours.....				0 36 0
Attendance and service:					
Males—					
Bar men.....	Per week, with board and lodging (no fixed time specified).	0	20	0 to 0	40 0 0
Butlers.....	.....do.....	0	20	0 to 0	30 0 0
Coachmen.....	.....do.....				0 20 0
Cooks.....	.....do.....	0	20	0 to 0	60 0 0
Dairymen.....	.....do.....	0	15	0 to 0	20 0 0
Gardeners.....	.....do.....	0	20	0 to 0	30 0 0
Gardeners' laborers.....	.....do.....	0	15	0 to 0	20 0 0
Scullyery.....	.....do.....	0	15	0 to 0	20 0 0
Waiters.....	.....do.....	0	20	0 to 0	25 0 0
Female—					
Bar-maids.....	.....do.....	0	20	0 to 0	30 0 0
Cooks.....	.....do.....				0 25 0
General servants.....	.....do.....	0	10	0 to 0	18 0 0
House-maids.....	.....do.....	0	12	0 to 0	16 0 0
Laundresses.....	.....do.....	0	16	0 to 0	20 0 0
Nurse-maids.....	.....do.....	0	7	0 to 0	10 0 0
Waitresses.....	.....do.....	0	14	0 to 0	20 0 0
Agricultural and pastoral pursuits:					
Agricultural laborers.....	Per annum (no fixed time specified).....	30	0	0 to 50	0 0 0
Boundary riders.....	.....do.....	40	0	0 to 50	0 0 0
Bush carpenters.....	.....do.....	40	0	0 to 50	0 0 0
Cooks (station).....	.....do.....	30	0	0 to 50	0 0 0
Farm hands.....	.....do.....	30	0	0 to 50	0 0 0
Fell-mongers.....	Per day, 55 hours per week.....				0 7 6
Fencers.....	Per annum, with board and lodging (no fixed time specified).	40	0	0 to 50	0 0 0
Married couples—					
Wife cook.....	.....do.....	65	0	0 to 80	0 0 0
Husband cook.....	.....do.....	75	0	0 to 100	0 0 0
Shearers.....	Per 100 sheep (no fixed time specified)..				0 20 0
Stockmen.....	Per annum, with keep (no fixed time specified).	40	0	0 to 60	0 0 0
Wine-growers.....	.....do.....	70	0	0 to 100	0 0 0
Wool scourers.....	Per day.....				0 7 6
Wool sorters.....	Per 1,000 fleeces (no fixed time specified).				0 20 0
Miscellaneous trades:					
Basket-makers.....	Per week of 48 hours.....	0	40	0 to 0	50 0 0
Blind.....	.....do.....	0	15	0 to 0	30 0 0
Bellows-makers.....	Per week of 54 hours.....				0 50 0

* Piecework, $1\frac{1}{4}$ d. to $1\frac{1}{2}$ d. per pound, no fixed time specified.

Table showing rates of wages of various trades, etc., during 1889—Continued.

Employment.	Hours of labor.	Wages.					
		£	s.	d.	£	s.	d.
Miscellaneous trades—Continued.							
Coach builders.....	Per day of 8 hours.....	0	8	0	10	0	10
Coach painters.....	.....do.....	0	8	0	10	0	10
Coach trimmers.....	.....do.....	0	8	0	10	0	10
Coopers (generally piecework).....	Per week of 44 hours (average earning)...				0	55	0
French polishers.....	Per day of 8 hours.....	0	8	0	10	0	10
Gas stokers.....	Per day, 56 hours per week.....				0	9	6
Hair-dressers.....	Per week of 54 hours.....	0	40	0	10	0	60
Jewelers.....	Per day of 8 hours.....	0	8	0	10	0	10
Laborers.....	.....do.....	0	6	0	10	0	8
Perambulator makers.....	.....do.....	0	7	0	10	0	9
Photographers.....	Per week of 48 hours.....				0	80	0
Photographers' assistants.....	.....do.....	0	30	0	10	0	40
Potters.....	Per day of 8 hours.....	0	8	0	10	0	10
Quarrymen.....	.....do.....				0	10	0
Soap-makers.....	Per week of 56 hours.....				0	45	0
Sweeps.....	.....do.....				0	36	0
Tobacco operatives.....	Per week of 54 hours.....	0	40	0	10	0	80
Upholsterers.....	Per day, 54 hours per week.....	0	8	0	10	0	9
Wheel-wrights.....	Per day, 48 hours per week.....	0	8	0	10	0	10
City municipal employés :							
Carpenters.....	Per day, 44 hours per week.....	0	8	0	10	0	10
Carters.....	Per day, 44 hours per week (finding horse).....				0	11	6
Engineers.....	Per day, 44 hours per week.....	0	11	0	10	0	12
Engine drivers.....	.....do.....				0	8	0
Gangers.....	.....do.....	0	9	0	10	0	11
Laborers.....	.....do.....	0	7	0	10	0	8
Overseers.....	.....do.....	0	8	0	10	0	9
Regulators of street traffic.....	.....do.....	0	8	0	10	0	9
State railway employés :							
Blacksmiths.....	Per day of 8 hours.....	0	9	0	10	0	12
Blacksmiths' strikers.....	.....do.....	0	7	6	10	0	8
Boiler-makers.....	.....do.....	0	9	0	10	0	12
Brakemen.....	Per week of 55 hours.....				0	42	0
Brass finishers.....	Per day of 8 hours.....	0	9	0	10	0	11
Carpenters.....	.....do.....	0	8	8	10	0	11
Carriage builders.....	.....do.....	0	10	0	10	0	11
Carriage trimmers.....	.....do.....	0	10	0	10	0	10
Cleaners (engine).....	Per day, 55 hours per week.....	0	5	0	10	0	7
Engine-drivers—							
Locomotive.....	.....do.....	0	11	0	10	0	15
Stationary.....	.....do.....	0	7	0	10	0	10
Fettlers.....	Per day of 8 hours.....				0	7	6
Firemen.....	.....do.....	0	8	0	10	0	10
Fitters.....	.....do.....	0	9	0	10	0	13
Foremen.....	Per annum, 48 hours per week.....	240	0	0	10	450	0
Gangers.....	Per day of 8 hours.....				0	9	0
Guards.....	Per day, 55 hours per week.....	0	9	0	10	0	11
Laborers.....	Per day of 8 hours.....	0	7	0	10	0	7
Machinists.....	.....do.....	0	7	6	10	0	9
Molders.....	.....do.....	0	8	6	10	0	11
Painters.....	.....do.....	0	8	0	10	0	11
Pattern-makers.....	.....do.....	0	9	0	10	0	12
Porters.....	Per day, 55 hours per week.....	0	7	0	10	0	10
Shunters.....	.....do.....	0	8	0	10	0	11
Signal men.....	.....do.....	0	7	0	10	0	10
Station-masters.....	Per annum (no fixed time specified).....	150	0	0	10	400	0
Wagon builders.....	Per day of 8 hours.....	0	9	6	10	0	10
Watchmen.....	Per week of 55 hours.....	0	42	0	10	0	45

Table showing rates of wages of various trades, etc., during 1889—Continued.

Employment.	Hours of labor.	Wages.	
Mining:			
Coal miners*—		£ s. d.	£ s. d.
Northern, hewing.....	Per day, 44 hours per week.....	0 10 6 to	0 12 6
Southern, hewing.....	.....do.....	0 8 0 to	0 9 0
Boys employed in mines.....	.....do.....	0 3 0 to	0 5 0
Gold miners	Per week of 44 hours.....		0 50 0

* Coal miners working under-ground are mostly paid piecework, at the rate of 2s. 6d. to 3s. per ton in the southern mines and 4s. 2d. per ton in the northern.

Table showing the rate of wages at the Broken Hill silver mine.

Employment.	Hours of labor.	Wages.					
		£	s.	d.	£	s.	d.
Mechanics and surface hands :							
Engineers	Per shift of 8 hours.....	0	10	0	10	0	0
Masons and brick-layers.....	.....do.....	0	10	0	10	0	0
Carpenters.....	.....do.....	0	10	0	10	0	0
Blacksmiths.....	.....do.....	0	10	0	10	0	0
Blacksmiths' strikers.....	.....do.....				0	8	4
Engine drivers—							
Stationary.....	.....do.....				0	10	0
Holisting.....	.....do.....	0	10	0	10	0	0
Firemen.....	.....do.....				0	9	0
Firemen's assistants.....	.....do.....				0	8	4
Fitters.....	.....do.....	0	10	0	10	0	0
Machine men (shop).....	.....do.....	0	9	0	10	0	0
Boiler-makers.....	.....do.....				0	12	0
Riveters.....	.....do.....	0	9	0	10	0	0
Tinsmiths.....	.....do.....				0	10	0
Saw-mill men.....	.....do.....	0	8	4	10	0	0
Horse drivers.....	Per shift of 8 hours, exclusive of time occupied in cleaning and harnessing.				0	8	4
Laborers (all).....	Per shift of 8 hours.....				0	8	4
Boys.....	.....do.....	0	3	0	10	0	7
Tappers.....	.....do.....				0	10	0
Flag wheelers.....	.....do.....				0	9	0
Feeders.....	.....do.....				0	10	0
Charge wheelers.....	.....do.....				0	9	0
Under-ground hands :							
Miners.....	.....do*.....				0	10	0
In wet shafts.....	.....do.....	0	10	0	10	0	0
Brace and plat men.....	.....do.....				0	9	0
Truckers.....	.....do.....				0	8	4
Ore-dressing hands :							
Shift washers.....	.....do.....				0	10	0
Head runners.....	.....do.....				0	9	0
Head feeders.....	.....do.....				0	9	0
Engine-drivers.....	.....do.....				0	10	0
Tin.....	Per week of 44 hours.....				0	50	0

NOTE.—All time worked over 8 hours per day paid for at the rate of time and a quarter, Sundays not excepted.

* 6 hours on Sunday to constitute a shift work.

Table showing average retail price of food, etc., in New South Wales.

Year.	Wheat, per bushel.	Bread, per loaf of a pounds.	Rice, per pound.	Oatmeal, per pound.	Tea, per pound.	Sugar, per pound.	Coffee, per pound.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1836.....	8 6	.....	0 9	.....	2 6	0 3½	.....
1837.....	8 9	.....	.....	.....	1 9	0 4	1 6
1838.....	8 0	.....	.....	.....	.....	.....	.....
1839.....	17 4	.....	.....	.....	2 6	0 3½	1 6
1840.....	6 6	.....	.....	.....	2 6	0 3½	1 4
1841.....	5 6	.....	.....	.....	2 6	0 3½	1 4
1842.....	6 6	0 4½	0 2	.....	2 6	0 3½	1 4
1843.....	4 3	0 3½	0 1½	.....	2 6	0 3	0 10
1844.....	4 0	0 2½	0 1½	.....	1 5	0 2½	0 8½
1845.....	4 3	0 3	0 3	.....	1 6	0 3	0 7½
1846.....	5 0	0 4	0 1½	.....	2 3	0 4	0 10
1847.....	5 0	0 4	0 3½	0 6	2 4	0 4	1 1
1848.....	5 0	0 4	0 3½	0 6	2 0	0 3½	1 1
1849.....	4 0	0 3½	0 3½	0 5½	1 9	0 3½	1 0
1850.....	4 0	0 3½	0 4	0 6	1 10	0 3½	1 2
1851.....	8 6	0 6½	0 4	0 6	1 4	0 3½	1 3
1852.....	6 0	0 6½	0 4	0 6	1 4	0 3½	1 3
1853.....	6 9	0 6½	0 4½	0 6	1 4	0 3½	1 3
1854.....	12 6	0 9	0 5	0 7½	2 6	0 5	1 6
1855.....	16 5	0 11	0 6	0 9	2 5	0 7	1 8
1856.....	12 3	0 8½	0 5½	0 7	2 2½	0 5½	1 7½
1857.....	7 4	0 6	0 5	0 7	2 6	0 7½	1 8
1858.....	10 3	0 8	0 6	0 7	2 6	0 7	1 8
1859.....	8 6	0 8½	0 4½	0 7	2 6	0 5	1 8
1860.....	8 0	0 6½	0 5	0 6	2 3	0 5½	1 6
1861.....	6 6	0 6½	0 4	0 6	2 4	0 5½	1 6
1862.....	7 0	0 4½	0 3	0 5	2 0	0 4½	1 5
1863.....	6 6	0 4	0 3	0 4	2 0	0 4½	1 4
1864.....	7 0	0 5½	0 3	0 4	2 0	0 4½	1 4
1865.....	9 6	0 7½	0 3	0 4	2 0	0 4½	1 4
1866.....	8 4	0 6½	0 4	0 4	2 6	0 4	1 4
1867.....	4 3	0 3½	0 3½	0 4	2 0	0 4	1 4
1868.....	5 9	0 4	0 4	0 4	2 0	0 4	1 4
1869.....	4 9	0 3½	0 3	0 4	2 0	0 4	1 0
1870.....	5 0	0 3½	0 3	0 4	2 0	0 4	1 2
1871.....	5 7	0 3½	0 2½	0 2½	2 3	0 4	1 0
1872.....	5 0	0 3½	0 3	0 3	1 9	0 4	1 1
1873.....	5 1	0 4	0 2½	0 2½	1 9	0 4	1 2
1874.....	6 9	0 3½	0 3	0 3½	1 9	0 4	1 4
1875.....	4 7	0 3	0 3	0 3	1 9	0 4½	1 2
1876.....	5 1	0 3½	0 3	0 3	1 9	0 4	1 2
1877.....	6 1	0 4	0 3	0 3½	2 0	0 4	1 3
1878.....	6 1	0 4	0 3	0 3	1 9	0 4	1 3
1879.....	5 0	0 3½	0 2½	0 2½	1 6	0 3½	1 0
1880.....	4 8	0 3	0 3	0 3	2 0	0 4	1 5
1881.....	4 1	0 3½	0 3	0 3	2 0	0 3½	1 5
1882.....	5 5	0 4	0 3½	0 4	2 0	0 4	1 5
1883.....	5 2	0 3½	0 3	0 4	2 0	0 4	1 9
1884.....	4 3	0 3	0 2½	0 3	1 6	0 3½	1 4
1885.....	4 10	0 3	0 3	0 3	1 9	0 3	1 5
1886.....	4 3	0 3½	0 2½	0 2½	1 9	0 3½	1 6
1887.....	3 10	0 3½	0 3	0 2½	1 9	0 3½	1 6
1888.....	3 6	0 3	0 3	0 2½	1 6	0 3½	1 6
1889.....	4 8	0 3½	0 3	0 3½	1 6	0 3½	1 6

Table showing average retail price of food, etc., in New South Wales—Continued.

Year.	Beef, per pound.	Butter, per pound.		Cheese (colonial), per pound.	Salt, per pound.	Potatoes, per cwt.
		Fresh.	Salt.			
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1836.....	0 3	2 3	1 9	1 0	.....	10 6
1837.....	0 4½	2 6	1 9	1 0	0 1	.....
1838.....	.....	.....	.....	.....	.....	.....
1839.....	0 3	.....	.....	.....	.....	.....
1840.....	0 4½	.....	.....	.....	.....	.....
1841.....	0 4½	.....	.....	.....	.....	.....
1842.....	0 3½	2 6	2 0	1 1½	0 1	16 0
1843.....	0 2½	1 9	1 0	0 9	0 0½	7 6
1844.....	0 2	1 5	0 9	0 4½	0 1½	4 6
1845.....	0 2½	1 6	1 0	0 6	0 1½	4 6
1846.....	0 2½	1 8	1 3	0 6	0 1½	6 8
1847.....	0 2	1 2	1 0	0 7	0 1½	5 6
1848.....	0 2	1 1	0 11	0 8	0 1½	6 0
1849.....	0 1½	1 2	1 0	0 6½	0 1½	6 ½
1850.....	0 1½	1 3	1 0	0 7	0 1½	7 0
1851.....	0 2½	1 3	1 0	0 7	0 1½	6 0
1852.....	0 3	1 3	1 0	0 7	0 1½	6 0
1853.....	0 3½	1 5½	1 1½	0 7½	0 1½	13 0
1854.....	0 4½	2 3	2 0	0 9	0 2½	18 6
1855.....	0 6	2 4	2 0	1 3	0 4	21 4
1856.....	0 3½	1 11	1 9	1 2	0 3	10 0
1857.....	0 3½	2 0	1 9	1 0	0 2½	14 6
1858.....	0 4	2 0	1 9	1 0	0 4½	15 6
1859.....	0 4	1 10	1 6	1 0	0 2½	8 0
1860.....	0 4	1 6	1 4	0 10	0 2½	7 6
1861.....	0 3	1 8	1 4	0 9	0 2½	7 3
1862.....	0 4½	2 3	1 0	0 9	0 1½	8 0
1863.....	0 4½	1 6	1 0	0 10	0 1½	7 0
1864.....	0 4	1 6	1 0	0 8	0 1½	5 0
1865.....	0 3	1 9	1 6	0 9	0 1½	8 0
1866.....	0 3	1 3	1 0	1 0	0 1½	6 0
1867.....	0 2½	1 6	1 3	0 7½	0 1	7 0
1868.....	0 3½	1 3	0 10	0 9	0 1½	9 0
1869.....	0 2	1 6	1 3	0 6	0 1	4 0
1870.....	0 3½	1 3	1 0	0 6	0 1	5 0
1871.....	0 2½	1 3	1 0	0 7½	0 0½	4 0
1872.....	0 2½	1 0	0 10½	0 9	0 0½	5 0
1873.....	0 2½	1 3	1 0	0 5	0 0½	3 6
1874.....	0 4	1 7	1 4	0 6	0 0½	4 9
1875.....	0 3½	1 3	1 0	0 9	0 1½	5 6
1876.....	0 5½	1 3	1 3	0 7	0 1	4 9
1877.....	0 4½	1 6	1 4	0 6	0 1	4 9
1878.....	0 4	1 3	1 0	0 6	0 0½	5 10
1879.....	0 4	0 10½	0 8	0 6	0 0½	6 0
1880.....	0 3½	0 10	0 8	0 7	0 0½	4 3
1881.....	0 3½	0 10½	0 7	0 6½	0 0½	4 0
1882.....	0 4½	1 3	1 3	0 8	0 1	5 6
1883.....	0 4	1 6	1 3	1 0	0 1	5 0
1884.....	0 4½	1 3	1 0	0 9	0 1	5 0
1885.....	0 4½	1 6	1 3	1 3	0 0½	6 0
1886.....	0 4½	2 0	1 8	1 1	0 1	6 9
1887.....	0 4	1 3	0 11½	0 10½	0 1	5 6
1888.....	0 4½	1 11	1 8	0 8½	0 1	7 0

Table showing average retail price of food, etc., in New South Wales—Continued.

Year.	Beer (colonial), per gallon.	Candles, per pound.	Soap, per pound.	Starch, per pound.	Tobacco, per pound.	
					Colonial	Imperial.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1836.....			0 4½			3 3
1837.....	1 0					4 0
1838.....						
1839.....			0 4½			3 3
1840.....			0 4½			3 3
1841.....			0 4½			3 3
1842.....			0 4½			3 6
1843.....	1 9					
1844.....	2 3				1 4	3 6
1845.....	1 3	0 3½	0 3½		1 6	3 6
1846.....	1 1	0 4	0 3½		1 6	4 6
1847.....	2 0	0 4½	0 5		1 9	4 6
1848.....	3 4	0 6	0 5	1 0	1 9	4 4
1849.....	3 3	0 6	0 5	1 0	1 9	4 4
1850.....	2 8	0 6	0 5½	1 1	2 0	4 7
1851.....	2 9	0 6	0 5½	1 0	2 7	4 10
1852.....	2 6	0 5½	0 5½	1 0	3 8	7 9
1853.....	2 6	0 6	0 6	1 0	4 0	8 0
1854.....	2 4½	0 6	0 6	1 0	4 0	7 6
1855.....	3 6	0 8½	0 8	1 6	4 0	5 6
1856.....	4 7	0 10	0 8	1 6	3 0	5 0
1857.....	3 6	0 9½	0 7½	1 1½	2 6½	5 3
1858.....	4 0	0 9	0 7	1 0	2 7	5 0
1859.....	4 3	0 9½	0 7	1 5	2 6	5 0
1860.....	4 0	0 10½	0 6½	1 0	2 6	5 0
1861.....	3 6	0 9½	0 7	1 0	2 3	5 0
1862.....	3 6	0 7½	0 6	0 10½	2 0	5 6
1863.....	2 0	0 7	0 4½	0 8	4 6	6 0
1864.....	1 6	0 7	0 4	0 7	3 0	7 6
1865.....	2 0	0 7	0 4	0 8	1 6	5 6
1866.....	2 0	0 7	0 4	0 8	2 6	5 6
1867.....	2 0	0 7	0 4½	0 7	2 6	5 0
1868.....	1 6	0 6	0 4	0 7	1 9	4 6
1869.....	2 0	0 6	0 4	0 7	1 9	5 0
1870.....	1 4	0 5	0 4	0 8	1 0	3 6
1871.....	1 4	0 5	0 4	0 7	1 3	3 6
1872.....	2 3	0 5	0 3	0 4½	1 0	3 0
1873.....	1 4	0 5	0 3	0 5	1 4	3 6
1874.....	2 3	0 5	0 3	0 5	2 0	3 6
1875.....	2 0	0 4½	0 2½	0 6	1 9	3 3
1876.....	3 0	0 4½	0 3	0 5	2 0	3 9
1877.....	2 0	0 5	0 2½	0 5	1 9	3 0
1878.....	2 0	0 5	0 2½	0 5	2 0	3 6
1879.....	2 0	0 5	0 2	0 5	1 6	3 0
1880.....	2 0	0 4½	0 2	0 5	1 6	3 9
1881.....	2 0	0 5½	0 3	0 5½	2 0	4 0
1882.....	2 0	0 5½	0 3	0 5½	2 0	4 0
1883.....	2 0	0 6	0 2½	0 6	3 0	5 0
1884.....	2 0	0 6	0 3	0 7	3 0	6 0
1885.....	2 0	0 5	0 3	0 6	3 0	5 0
1886.....	2 0	0 5½	0 3	0 6½	3 0	6 0
1887.....	2 0	0 9½	0 4	0 6½	4 0	5 0
1888.....	2 0	0 8½	0 3½	0 6½	4 0	5 0
1889.....	2 0	0 8	0 3½	0 6	4 0	5 0

Table showing wholesale prices for food, etc., in New South Wales for 1889.

Articles.	January.	February.	March.	April.	May.	June.	July.
Milled produce:							
Flour—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New Zealand.....per ton			11 12 6	10 3 9	11 10 0	10 17 0	10 7 6
South Australian or Victorian*.....per ton							12 2 3
New South Wales.....do							11 13 4
Australian brands*.....do	12 6 4½	11 11 6	12 14 7	12 10 0	12 10 0	12 7 6	
Bran.....per bushel	0 0 11½	0 0 11	0 1 1½	0 1 1½	0 1 1	0 1 1	0 0 11½
Pollard.....do	0 1 0	0 1 1	0 1 3½	0 1 3	0 1 2½	0 1 2½	0 1 0
Root crops:							
Potatoes.....per ton	14 12 7½	8 13 6½	5 8 4	4 19 3	4 12 2½	5 6 8	5 10 0
Onions.....do	14 0 0	12 15 0	12 7 6	15 11 9	15 3 9	22 7 6	27 0 0
Carrots.....per dozen bundles	0 0 15½	0 0 12½	0 0 13½	0 0 13½	0 0 11½	0 0 10½	0 0 10½
Dairy produce:							
Butter (fresh).....per pound	0 0 11½	0 0 10½	0 0 16	0 0 18½	0 0 16½	0 0 13½	0 0 15½
Cheese.....do	0 0 8	0 0 6½	0 0 6	0 0 6½	0 0 6½	0 0 6½	0 0 6½
Eggs.....per dozen	0 0 14½	0 0 18	0 0 13	0 0 22½	0 0 24½	0 0 18½	0 0 12½
Bacon.....per pound	0 0 8	0 0 8½	0 0 9	0 0 7½	0 0 8½	0 0 8½	0 0 6
Ham.....do	0 0 10½	0 0 11	0 0 11	0 0 10	0 0 10½	0 0 11	0 0 9
Apiary:							
Honey.....do	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4	0 0 4
Bees-wax.....do	0 0 10½	0 0 10½	0 0 10½	0 0 10½	0 0 10	0 0 10	0 0 10
Hay:							
Oat or wheat.....per ton	6 4 0	6 1 0	6 3 9	6 17 10	7 12 9	7 8 4	6 5 1
Lucern.....do	3 13 5	3 17 0	4 8 6	4 9 7	5 6 2	5 7 0	5 7 6
Chaff:							
Oat.....do	6 12 10	6 10 8	6 10 9	7 12 10	7 15 0	7 12 7	6 7 5
Other.....do	4 8 0	4 13 0	3 8 6	4 11 0	5 0 9	5 1 6	4 17 4
Straw (clean).....do	4 5 0	4 6 0	4 0 6	4 16 9	4 10 0	4 15 11	4 2 0
Cereals:							
Feed grains—							
Maize.....per bushel	0 3 5½	0 3 6	0 3 2	0 3 5	0 3 4½	0 3 3	0 3 2½
Oats.....do	0 3 10	0 3 3½	0 3 2½	0 3 5½	0 3 5½	0 3 1½	0 3 2
Cape barley.....do	0 4 0	0 3 9	0 3 2½	0 3 5½	0 3 5½	0 3 2½	0 3 1½
Wheat—							
New Zealand.....do	0 4 9	0 4 5½	0 4 6½	0 4 6	0 4 7½	0 4 4½	0 4 2
South Australian or Victorian.....per bushel	5 0 0	0 4 10½	0 5 5	0 5 5½	0 5 5½	0 5 2½	0 5 2½
Californian.....do	0 4 8		0 4 8	0 4 9	0 4 11	0 4 4½	0 4 2

Articles.	August.	Septem-ber.	October.	Novem-ber.	Decem-ber.	Average.
Milled produce:						
Flour—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New Zealand.....per ton	10 4 6	10 4 10	9 16 3	10 0 0	9 18 9	10 9 6
South Australian or Victorian*.....do	12 2 1	12 3 9	12 2 0	12 2 4	11 5 10	11 9 8½
New South Wales.....do	11 10 0	11 10 0	11 17 6	11 9 4		11 12 0½
Australian brands*.....do						12 6 8
Bran.....per bushel	0 0 10	0 0 9	0 0 8½	0 0 8½	0 0 7	0 0 10½
Pollard.....do	0 0 10	0 0 8½	0 0 8	0 0 8½	0 0 7	0 0 11½
Root crops:						
Potatoes.....per ton	5 16 9	5 16 9	6 17 11	5 18 4	3 13 4	6 8 9½
Onions.....do	31 2 6	32 0 0	33 10 0	16 6 8	5 16 3	19 13 5
Carrots.....per dozen bundles	0 0 13½	0 0 14	0 0 15½	0 0 11	0 0 10	0 0 12½

* Assuming that "Australian brands," "South Australian," and "Victorian" are the same, the average price for this class would be £12 3s. 9d. for the twelve months. These prices are the mean of both roller and stone ground flours. The difference in price ranges from £2 in very superior to 10s. in New Zealand sorts, but is commonly about £1.

† Or £12 3s. 9d., taking Australian brands, for the first six months.

Table showing wholesale prices for food, etc., in New South Wales for 1889—Continued.

Articles.	August.	September.	October.	November.	December.	Average.
Dairy produce—	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>
Butter (fresh).....per pound..	0 0 11	0 0 10	0 0 9½	0 0 8½	0 0 8½	0 0 10½
Cheese.....do.....	0 0 6½	0 0 6½	0 0 6	0 0 5½	0 0 5½	0 0 6½
Eggs.....per dozen..	0 0 10½	0 0 10½	0 0 9½	0 0 11½	0 0 15½	0 0 15½
Bacon.....per pound..	0 0 6	0 0 6	0 0 6½	0 0 8½	0 0 10½	0 0 7½
Ham.....do.....	0 0 9	0 0 9	0 0 9	0 0 9½	0 0 10½	0 0 10
Apiary:						
Honey.....do.....	0 0 4	0 0 4	0 0 3½	0 0 4	0 0 4	0 0 4
Bees-wax.....do.....	0 0 10	0 0 10	0 0 10	0 0 10	0 0 10	0 0 10½
Hay:						
Oat or wheat.....per ton..	5 6 0	4 17 2	4 7 0	4 5 6	3 12 6	5 15 0
Lucerne.....do.....	4 7 0	3 14 9	2 18 7	3 0 2½	2 11 6	4 1 9
Chaff:						
Oat.....do.....	6 5 0	6 1 1	5 16 0	5 6 8	4 12 3	6 8 7
Other.....do.....	4 15 0	4 0 0				4 10 6
Straw (clean).....do.....	4 0 0	3 3 10	3 1 6	2 3 2	3 1 8	3 17 2
Cereals:						
Feed grains—						
Maize.....per bushel..	0 3 1½	0 3 1½	0 3 3½	0 3 0½	0 3 5½	0 3 3½
Oats.....do.....	0 3 0	0 3 0	0 3 0	0 2 6½	0 2 4½	0 3 1½
Cape barley.....do.....	0 3 1	0 3 2	0 3 2	0 3 0	0 3 0	0 3 3½
Wheat—						
New South Wales.....do.....					0 3 6½	0 3 6½
New Zealand.....do.....	0 4 1½	0 4 0½	0 4 7½	0 4 8½	0 3 9½	0 4 4
South Australian or Victorian.....do.....	0 5 2½	0 5 3½	0 4 10½	0 4 11	0 4 1½	0 5 1
Californian.....do.....	0 4 6½	0 4 5½	0 4 6½	0 4 8		0 4 6½

In some of the trades the rates at present may be slightly less, occasioned by the defeat of the great labor strike in Australasia during the months of September, October, and November.

Mr. Coghlan remarks, in reference to the above-quoted rates, that "the laboring classes are far in advance of their fellow-workmen in older countries in other respects besides the question of better wages." He directs attention to the fact that "in nearly all branches of labor the daily toil is restricted to eight hours." Although there is no statutory recognition of this time as the limit of man's labor, it is tacitly acknowledged even by the governments of the various colonies. It is well enough, however, to remark that the climate is such, and especially in the northern parts of the colonies, that a day's work of eight hours is a heavier tax on the strength and endurance of the laborer than one of ten or twelve hours in the more thickly populated districts of the United States. It is the experience of American workmen in Sydney that the cost of living, in spite of its being a free port, is fully 30 per cent. higher than in the United States. House rent is 20 per cent. more than it is in nearly all the cities of about the same population in America. Wheat bread is one-half dearer than in San Francisco. Fruit is in the same proportion; indeed, the cost of fruit is so great, even when in season, that there is a brisk demand for American tinned fruits. Tins which retail here for 30 cents each can be purchased in the United States out of season for 12 cents each. Tea and coffee are 20 per cent. cheaper in nearly all the larger cities in America than in Sydney. Meat appears to be the

only article of food supply which is lower in price than in America; but even the retail price of that is out of all proportion to the actual cost of production. Mr. Coghlan gives the retail price of beef at 9 cents per pound. Pork and sausages seem to be dearer here than anywhere else. It is seldom that a fair article of sausages can be obtained for less than 20 cents per pound, but they are nothing like as good as the imported ones in tins. A curious fact in connection with the subject of food supply in Australasia is the enormous quantity of meat consumed by each inhabitant. The consumption is given at 1.9 sheep and 0.26 cattle, equal to 264 pounds. Adding to this 12 pounds of pork, etc., the average yearly consumption of each inhabitant of Australasia is 276 pounds, against only 105 pounds in Great Britain and 120 pounds in the United States.

Workmen can travel a distance of from 10 to 15 miles in New York for 5 cents, while here the cost is six or seven times that amount. The ordinary train fare for short distances, however, is about the same as in America. Freight on the railways is 100 per cent. higher, and yet the railways are owned and controlled by the Government. For instance, apples can be brought all the way from St. Louis to New Orleans, a distance of over 600 miles, for 24 cents per barrel, while it would be considerably more than that sum for half the similar distance in Australia. Freight on bacon packed in cars in the United States per 1,000 miles is only 12½ cents per 100 pounds, 100 pounds of grain only the same rate, and almost every other article in like proportion. Here it would cost 100 pounds of bacon \$1.82 freight and 100 pounds of grain \$1.82 freight.

These heavy rates for transportation necessarily bring the cost of provisions up to extravagantly high figures. Mr. Coghlan, however, says it is quite possible that produce of all kinds may have been purchased at cheaper rates than those given in his tables, and that he is under the fair average prices, having a due regard for the class of goods consumed. He says it is important to take into consideration the quality of the goods consumed. Thus the ordinary sugar now used and obtainable at 7 cents per pound is a good white sugar, whereas some years ago only the commonest quality of yellow sugar could be purchased at that price. The candles now in general use are made of stearine, while formerly only the common tallow candle was in general use, and so with many other articles of general consumption. The retail prices are those actually paid from day to day, irrespective of the common wholesale rates in the Sydney markets. The wholesale prices are those quoted without regard to actual quantities purchased.

In regard to the question of wages, which has always been a disturbing element here, Mr. Coghlan and other Australian statista are silent. There is an opinion widely prevalent that the ruling rates of wages are far too high; but, considering the cost of living and other incidental expenses for the workman, I do not see how they could reasonably be less. Of course, there are articles of luxury, such as kid gloves, silks, and the finer articles of wearing apparel, which are cheaper; but in ordinary dress goods, and

especially in manufactured clothing, they are better and cheaper in America. They not only fit the person better there, but are stronger and better made in every way. It is said constantly by the press here that wages in these colonies are higher than anywhere else in the world, and that their payment absorbs a disproportionate share of the earnings of the community; that they have risen considerably in many branches of labor, while the earnings of capital have steadily declined. It is believed that the rates of wages are a check on enterprise by making it too costly, more so than the anticipated profits will justify, and consequently operate against the interests of the general community, and also against the interests of the working classes themselves, whose employment is very much curtailed by the limitation of enterprise; and it is said that if wages were lower capital would flow more freely. Thus the wage earners would be more regularly employed, and society, consequently, would be better off.

That these results could be brought about by lowering the rates of wages is certainly a question of great moment to the community. There is in every city in Australia a greater or less number of the unemployed. How they live is a mystery to me. In most cases the climate is mild enough to allow of their sleeping out-of-doors; but the cost of food is very high, and food must be procured in some way. During the day the unemployed not unfrequently parade the streets, carrying banners with inscriptions demanding bread or employment. In some instances they form themselves in delegations and seek interviews with the premier of the colony, the mayor of the city, or other public functionaries and set forth their claims. Sometimes their importunities meet with success, and on several occasions the governments have opened bureaus for their relief and distributed food and other necessaries among them. The policy of so doing has been seriously questioned, both by the press and people, and it has been finally abandoned as being opposed to the best interests of the community.

The Government itself is an extensive employer of labor. It has the construction and conduct of railways, telegraphs, and other public works, and in New South Wales gives employment to about 25,000 persons, 11,091 of whom were in 1889 employed on the railways, whose united pay amounted to \$7,217,020. Strange as it may appear, the number of men employed by the Government is considerably more than one-half of all those in factories and workshops in this colony put together. The latter had increased in the last eleven years from 24,741 to 44,989. Of this number of hands, there were engaged 2,422 in working up the raw material, the product of pastoral pursuits, and 8,244 in the preparation of food and drink; then there were 5,518 engaged in clothing and textile factories; 6,982 in the building materials industry, such as brick making, asphalt, joinery, paint, and pottery works; 8,211 in metal works, implements, and machinery; 1,225 on ship-building, 1,424 in furniture making; 4,688 in paper, printing, binding, and engraving establishments; 2,475 in the manufacture of vehicles, saddlery, etc.; 1,414 in light and fuel works, and 2,386 in miscellaneous employments.

There is, perhaps, no other country in the world, with the exception of the other Australasian colonies, where the number of Government employes bears such a strikingly large proportion to those engaged in independent pursuits. The various works undertaken and carried out by the governments of these colonies have been constructed out of borrowed capital principally, and the result is that the public debt of New South Wales alone has reached the enormous sum of \$226,904,844.

The subjoined table shows the public debt of New South Wales for each year from 1869 to 1889:

Year.	Amount.	Year.	Amount.
1869.....	\$46,455,755	1880.....	\$72,529,922
1870.....	47,113,219	1881.....	82,360,738
1871.....	51,655,457	1882.....	91,106,813
1872.....	52,427,924	1883.....	119,873,862
1873.....	52,764,613	1884.....	146,491,184
1874.....	51,177,919	1885.....	173,073,466
1875.....	55,821,855	1886.....	199,693,172
1876.....	57,227,700	1887.....	199,503,871
1877.....	57,056,885	1888.....	214,603,375
1878.....	56,880,231	1889.....	226,904,844
1879.....	72,692,950		

It is only just, however, to say that no part of this debt is due to war charges nor to the construction of works wholly of an unproductive character. The assets of the colony amount to considerably more than four or five times its liabilities, and for the most part comprise securities which could readily be converted into money, the total being given at \$837,038,000.

In controlling and working the railways, telegraphs, sewage works, and water supply works, the Government is obliged to pay especial attention to the subject of labor. An active and energetic committee on public works has been appointed from among the members of both houses of the legislature, whose function it is to investigate and report to Parliament upon the proposals made from time to time for the construction of public works. The committee has done much good towards regulating public expenditures and in securing an adequate return for the disbursements obtained by loans. The London Economist and other English financial journals blame the various colonial governments for keeping up fictitious rates of wages by the employment of labor on public works, many of which, the London Economist says, are of doubtful utility and seem to have been established solely for the purpose of increasing the political powers of the ministers among the working classes. The Sydney Economist, in a recent article entitled "The English Criticism of Australian Wages," says that there is a certain amount of truth in the assumption that colonial governments are large employers of labor of various kinds and requiring diverse abilities in helping to maintain the rates of wages, and that political pressure can, to a certain extent, be brought to bear by the working classes in combination to prevent a reduction of wages. The same journal, however, refutes the often-reported statement that the rates of wages in Australasia are fictitious.

It says:

It is just as absurd to say that the rates of interest in Australasia are fictitious because they happen to be nearly double those paid in England.

And further:

That employers are not likely to continue the payment of wages, except upon terms profitable to themselves.

Strikes have been so frequent in these colonies that the New South Wales Government has appointed a royal commission for the purpose of investigating their cause and to report upon the best means to eradicate their evil effects. This course seemed to be necessary, as the frequent and prolonged strikes in the colonies have entailed a vast amount of injury, not only upon the employers and general community, but upon the working-men themselves.

"The commission, which is composed of some of the most prominent public men in the colony, with the Hon. Dr. Andrew Garran as chairman, is likely," says the Sydney Morning Herald, "to be hampered in its praiseworthy undertaking by the objection of many of the labor unions to allow any thing like an inquiry into their proceedings." The members of the royal commission may not be able to recommend any very effective remedy for the evil, but, if they succeed in unraveling the causes of the troubles between capital and labor, a remedy will discover itself in due course. Mr. Finch, the president of the labor defense committee, a committee that controlled and directed the late strike, has a seat on the royal commission, and he is very decided in the opinion that the proceedings of the commission should be in secret and that the press and general public should be excluded from any of their sittings. The Sydney Morning Herald says that there is always something suspicious in an attempt to throw a veil of secrecy around an investigation, and in this case the action of Mr. Finch is particularly open to question. The Herald says:

It is sometimes thought by unreflecting people that it is merely a question of press interest when reporters are excluded from a meeting; but it is the people that are concerned, for in this the press is but the eye of the public, and the refusal of the presence of the reporter is the barring of the door against the people. There are, it is true, sometimes inquiries involving, for instance, state secrets or otherwise, from which it is expedient that the public and their representatives be debarred; but an inquiry such as this of the labor commission should have no secrets to conceal, and its findings should be public property. Granting that some excuse might be given for secrecy during a period of conflict, what possible secrets can there be now to cover, or why should any fears be entertained as to the disclosure of events connected with the recent struggle? Mr. Finch has raised the question of the presence of reporters, and, failing in his effort to enlist a feeling favorable to their exclusion, he has given notice to move, at the next meeting, that the press should not be admitted. What is the president of the labor defense committee ashamed of? Or what is it in the proceedings of the strike that in his opinion can not bear disclosure? It has, *prima facie*, a bad appearance when such a seeming consciousness displays itself, and, if the employers' unions do not shrink from the light of publicity being cast upon their proceedings, the president of the labor defense committee should at least have the tact to cloak his timidity. To hold over a report of the proceedings till the end of the inquiry would defeat the principal object, for few, if any, would wade through the voluminous report after the interest had gone from it; but by projecting the proceedings of the commission day by day on the broad sheet interest will be kept awake and the public will

be fully seized of the details. The effort at concealment on the part of the labor defense committee will find no support in the commission, and we trust that Mr. Finch will himself see the suspicion he is throwing on his party by his attempt to exclude the press from the inquiry.

It is only natural that the press and general public should take the profoundest interest in the action of the royal commission, in the hope that some remedy may be devised for the prevention of strikes and the consequent evils attendant upon them. Attention is just now being directed to the punishment by fines and imprisonment of those who simply acted as agents for the trades and labor unions.

Among the cases set apart as especially worthy of mention is that of A. Rae, who was a local secretary, and conveyed a resolution passed by the shearers' union to the members of the union in his district calling upon them to leave work on strike without, it is said, any intention on his part of influencing the persons to whom he delivered the orders. The case was tried in the law courts and judgment was delivered to the effect that the resolutions, or orders, conveyed by Rae were for the purpose of inducing workmen to break their contracts, and the result was that Rae was fined in a number of cases and, as the fines were not forthcoming, he has been imprisoned. A deputation composed of members of the shearers' union waited on the minister for justice in Sydney and applied for a remission of the penalties. They urged that Rae had only done subsidiary duty for the shearers' union, which, in the event of his refusal, others would have done, and that any prosecution of a servant of any union was unjustly discriminatory while the union itself was not proceeded against. It was stated that if Rae had broken the law every unionist secretary in the colony had done the same. The minister for justice, however, stated that no plea of direction by others could exonerate Rae, if he had committed the offense, and that every intelligent man must take the responsibility of his own actions, no matter to what degree he may have been influenced by the persuasions of individuals or organizations.

It may be mentioned that patrols and pickets were appointed by the unions to interfere with and intimidate those who, because they did not come under the orders of the unions, endeavored to pursue their ordinary occupations, and the most arbitrary and unjustifiable methods were resorted to for the avowed purpose of inflicting hindrance and loss upon certain employers. No effective notice was taken by the Government of these proceedings any further than to send a police or military force to preserve order in the event of any violence being committed by either side. Special constables were also sworn in, and their employment, together with the additional expense entailed through the use of the regular military and police forces, involved the country in very heavy expenditure; but this expenditure was small in comparison with that occasioned by the stoppage of the shipping, coal mines, gas-works, flour-mills, iron-foundries, shearing operations, and trade generally, while the strike lasted.

G. W. GRIFFIN,

Consul.

UNITED STATES CONSULATE,

Sydney, December 13, 1890.

SILK CULTURE IN SIAM.

REPORT BY CONSUL-GÉNÉRAL CHILD, OF BANGKOK.

The manufacture of silk in Siam is confined entirely to the Laos villages scattered throughout the country and to the Cambodians residing in the southeastern provinces bordering on Cambodia. The Siamese proper know nothing of rearing the silk-worm, an art which has been transmitted to the Laos through successive generations. The centers of silk productions in Siam are Korat, an ancient walled city, 130 miles northeast of Bangkok, and Battimbong, 200 miles to the southeast. Beautiful cloths, interwoven with gold and silver thread, are woven at Chiengmai, and a quantity of raw silk is annually exported from Hluang Prabang, on the Me-Kong River, to Chiengmai, one of the principal Laos states bordering on Burmah. The raw silk exported from Bangkok is sent to India, where it is mixed with the finer grades of Indian silks and woven into the better qualities of piece-goods. In many of the provinces the production of silk is annually diminishing, owing to the fact that foreign cotton goods are finding a market in these states, and the natives find that the time spent in the rearing of the silk-worm and the manufacture of cloth can be more profitably occupied in other avenues of industry.

The industry is confined solely to the women, who cultivate the mulberry-tree and weave the silk into scarfs and *panouns*. The silk-worm is reared in the wet season, when the tree is in full leaf, as only a small supply of leaves can be obtained in the dry season. As the silk is intended for their own use, they are careless in the rearing of the worm, and their rude instruments make the reeled silk of varying size and strength.

The annual export of raw silk shipped from the port of Bangkok is less than \$100,000, and no silk fabrics of any kind are exported. I have obtained from Mr. W. J. Archer, of the British legation, who was deputed to go to the province of Kabin and investigate the silk industry, much of the information concerning the rearing of the worm and the reeling of the silk.

THE TREE.

The tree is called by the Laos *ton mon* and the worm *tua mon*. There are two kinds of tree, but it appears doubtful whether they were originally distinct. The large kind is similar to the mulberry-tree, on the leaves of which silk-worms are fed in other countries, and in its full growth reaches a height of from 20 to 30 feet. This tree is, however, by no means common, as it is found very difficult to rear, requiring great care when young, though when it has firmly taken root it requires no attention, and is said to attain a great age. Ordinarily, only a small proportion of the trees planted are found to grow, for want of proper care. The tree should be carefully pruned, as is done in Europe, but this is not always attended to, and the branches there-

fore grow long and straggling, and the leaf loses much of its value. Like the European tree, it has a small white flower in clusters, but it bears no fruit. In Hluang Prabang, about 450 miles to the north, it is said to bear a red berry and is probably the same as the European black mulberry-tree. It is reproduced from cuttings, and is found to grow best on dry, sandy soil.

This kind has not been cultivated long in the provinces of Pachim, but was introduced from Korat some fifteen or twenty years ago.

The common kind is much smaller, and consists of a stem about half an inch in diameter with small branches at regular intervals. Its height is generally about 5 feet, but it may reach 7 feet. The bark is similar to that of the large kind, and the leaf appears to differ only in size; but I was told that the worms must be fed exclusively on the leaves of one or the other of the two kinds. It is also planted on dry ground, but the soil may be damper than with the larger kind. It requires constant watering and some care until it has grown to a height of 1 or 2 feet, and is manured once a year, in the sixth month before it is cut. The mode of reproducing is as follows: When the tree is about a year old, that is to say, in the month of April or May, it is cut down to the level of the ground, and then cut again into pieces some 10 inches long, which are planted in soft, loose soil. The cutting is inserted almost entirely, leaving only the top exposed. It grows very quickly and in about two months has produced sufficient foliage with which to feed the worms. The plantations are generally inclosed, in order to prevent cattle and buffaloes from browsing on the young shoots. The cuttings are planted irregularly and often mixed with other trees.

THE LEAF.

The shape of the leaf is cordate and deeply indented. Its size does not exceed 2 or 3 inches in the small kind, while that of the larger is often more than double. Both kinds bear leaf all the year round, but very little in the hot season. It is from the eighth to the eleventh month, that is to say, from June to September, that the new trees bear a sufficient quantity of such tender leaves as are most suitable for the young worms. Until the worm has cast off its new coat, when seven or eight days old, the leaves must be sliced; but after the third casting of the skin the larger leaves may be given freely, as also small branches. Care should be taken to give the leaf dry, but not dried.

THE SILK-WORM.

A small quantity of worms are reared throughout the year in order to keep up the breed, and about nine generations may thus be obtained in the course of one year. It is only, however, when the cuttings planted in April or May, as before described, have grown to a height of 4 or 5 feet that a large quantity of leaves can be obtained. The rearing season is therefore from the end of June to the end of September, and two broods are generally reared; but it is probable that the constant stripping of the leaves render the later produce inferior to the first.

The eggs are hatched in the period of ten days. The worms are then kept on the same piece of cloth on which the eggs have been laid by the moth for four or five days, when they are large enough to be taken off and placed on a round, flat tray of bamboo wicker-work about 3 feet in diameter, with a rim 1 inch high, in which they are kept until ready to spin the cocoon. The wicker-work should not be close, but ought to leave sufficient space for the litter to pass through without the worms falling off, and the basket is then called *takreng*. This precaution is often neglected, and the ordinary baskets used for winnowing rice are commonly used; these are then called *kadong*, both by Siamese and Laos; but in the north the rim is generally higher, and they are then called *ho*. The litter is then taken off by removing the worms with the hand into another basket.

The worms are not fed for the first few days. They are then fed three times a day—morning, noon, and evening—but they eat but little before the second casting of the skin; after that stage, however, they eat voraciously and are fed four or five times a day. They cast off the skin four times; the Laos say they “go to sleep,” and call the different stages the first, second, third, and fourth sleep (*non nung*, *nongsóng*, etc.). The size of the worm at the third casting of the skin is about 1 inch, and it is then of the ordinary greenish tint. After the fourth sleep it turns yellow, and soon after it is ready to spin. This is denoted by its refusing its food and straying away from it; it is then called *suk*, or ripe, and is close on a month old. Those that are ripe are then removed to a tray similar to the former, but having on its flat surface a number of concentric circles of bamboo trellis-work about $1\frac{1}{2}$ inches high. There is thus between the circles a series of compartments $1\frac{1}{2}$ inches broad, in which the worms spread their web and spin the cocoon in the course of a day or a night. This tray, called *tcho* by the Laos, as well as the other ones containing the worms or seed, are all placed on a series of frames, called *kheng*, made in such manner as to prevent ants or other insects from molesting the worms or cocoons. This contrivance is very simple and appears to answer the purpose very well. A series of four or five oblong frames are formed by four vertical pieces of bamboo, or sometimes rope, some 4 feet long, which are kept apart at intervals of about 10 inches by horizontal pieces 2 feet long placed broadwise and rather less than 4 feet long placed lengthwise. The whole is firmly attached, and the two vertical pieces on either side are tied together after the topmost tray, and the rope is made to pass through a cup, generally half of a cocoa-nut, filled with water. The whole is then suspended to a horizontal pole, which hangs from the ceiling in the corner of the common sitting room or bedroom.

The trays are always carefully covered with a piece of cloth, in order to prevent flies and other insects from molesting the contents, but care is seldom taken that the position should be either cool or airy. The small quantity of worms reared in the hot season seems to be affected by the heat only to a modified extent, but perhaps the loss would be greater if the rearing season were not comparatively cool.

DISEASES.

There is stated to be a disease that is often fatal and which is probably the same as that called "jaundice" in France. The worm turns quite yellow, and a quantity of saliva issues from its mouth. It is said, however, to be due to ignorance or carelessness in rearing the worm, and those who have more experience are hardly ever known to lose any. The worms are also sometimes too weak when ripe and spin a cocoon which is thin and worthless, but this may also be attributed to neglect.

In size the cocoons compare unfavorably with the European kinds, being only about two-thirds as large; but in the northern Laos provinces, where there are two rearing seasons, one in the late summer and the other in the late autumn, the cocoons of the first produce are said to be of a larger size. When formed they are detached, and, if only in small quantities, they are thrown into boiling water and reeled within the next few days. If a larger quantity is obtained than can be reeled conveniently without delay or if it is desired to keep them for some time, they are put out in the sun for a day. With a clear sky the worm is supposed to have been killed by midday.

GRAINAGE.

When it is desired to obtain the seed, the cocoons are kept in one of the baskets described above and carefully guarded from insects. The rearers who have most experience can easily distinguish the cocoons containing the male chrysalis from those containing the female by shaking them, when the former are said to give a firmer sound. The female moth, however, is plainly distinguished by its larger size and because it remains stationary after leaving the cocoon, while the male flutters about. They come out of the cocoon before morning, and, if then coupled, must be detached in the afternoon. The male is then thrown away, and perhaps forty or fifty of the females are placed on a small piece of cotton cloth and covered with a cup to prevent their straying and scattering the seed over too large a surface. The next morning the females, having laid their eggs, are thrown away, and the piece of cloth is folded and put away on one of the trays until the eggs are nearly hatched. There appears to be very little disease amongst the chrysalides, and, if the cocoons are properly taken care of, hardly any die.

SPINNING AND SPINNING MACHINES.

The thread is generally coarse, for at present little care is taken to render it fine, and, excepting for their best silk cloths, a thick and strong thread is preferred.

The spinning machine is of a very rudimentary description. A thin piece of soft wood some 2 inches broad is bent in the shape of a horseshoe; about 10 inches from its extremities a piece of wood of like thickness and breadth, and having a small hole in the middle, is fixed horizontally; some 6 inches above it is a small winder placed horizontally in the same manner. The two extremities of the machine are fixed on two small flat pieces of wood having

a groove on the inner side, which enables it to be fixed on to the rim of an earthen pot. It thus stands over the mouth of the pot filled with boiling water, in which a number of cocoons—perhaps forty or fifty—have been thrown. The spinner sits before a small fire-place, on which is placed the pot with the spinning machine fixed firmly on to it, and with a stick having a small slit at the top shakes the cocoons in such wise as to collect the threads of about half the number in the pot. Having twisted them with the hand into a single thread, it is passed through the small hole and fastened loosely over the winder. It is then pulled out with the right hand, the winder being thus caused to revolve, and is gradually heaped up in a basket close at hand. In the left hand the spinner holds the stick described before, with which to keep down the filament when it becomes entangled. An experienced hand is able to spin with considerable rapidity, but it is evident that it is not easy to produce rapidly a fine or, regular thread. This machine is called by the Laos *mak hueng talok*. Its height is generally about 3 feet, but sometimes it is higher, being formed of a bamboo slit in half and fixed on the pot in the shape of an isosceles triangle.

REELING.

The thread is reeled on a winder 20 inches long fixed horizontally on a stand (*ak*), on which the thread is improved by scraping off with a knife where it appears irregular and by removing any blemishes. It is then reeled on another winder (*pia*) made of two sticks fixed horizontally on the extremities of a piece of wood about 2 feet high. This is held in the middle with the left hand and the thread wound in zigzag fashion with the right over the extremities of the cross sticks. The skein thus takes the shape in which it is generally sold. Sometimes this winder is replaced by another formed by four cross-pieces instead of two, the extremities of which are joined with string; it is then laid horizontally on a stand, is furnished with a handle, and the thread is reeled over the strings. This winder, called *ra-wing*, is used both by the Laos and Siamese.

When it is required to twist a double thread or tram, another instrument comes into use. A narrow stand (*nai*) about 4 feet long contains at one end a large wheel turned by a handle. A string is passed over the latter and round a piece of iron a foot in length, projecting from the stand on one side and rounded at the end. Some rough cotton is wound over the middle part, in which the string catches, so that in turning the wheel the iron point revolves quickly. The two or more threads are tied together to the extremity of the iron instrument, and this in revolving twists them firmly together.

This instrument, as well as the winders, is used for cotton, as well as silk, thread.

JACOB T. CHILD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Bangkok, November 24, 1890.

COMMERCE IN GIBRALTAR AND SPAIN.

REPORT BY CONSUL SPRAGUE.

GENERAL TRADE AND COMMERCE.

On the present occasion I have very little to add to my previous reports regarding the general trade and navigation of Gibraltar in connection with the United States.

Shipping.—Notwithstanding that the usual navigation of this port has been pretty active since the withdrawal of quarantine against certain Spanish ports, the total absence of American merchant shipping still continues conspicuous at this port.

I transmit a return of the numerous foreign steamers that have called at this port during the past year to coal and provision and the number of steerage passengers on board, being chiefly emigrants from Italy and Sicily bound for the United States.

Cold weather.—The season for the usual sowing of barley and wheat in Spain has been somewhat retarded on account of unusually cold and tempestuous weather, which has also caused considerable injury to the sugar-cane plantations towards the district of Malaga.

Prices of cereals.—Prices in foreign cereals have been gradually advancing in this market and its immediate neighborhood, and American flour has been in very fair demand. The supplies have been moderately though constantly imported direct from New York by foreign steam-ships; also, refined petroleum in tins, which important article of consumption continues to be dealt with here by a few traders for retail sale on their own account. The demand for Russian descriptions does not seem to improve.

Increase in the Spanish tariff.—The Spanish Government, under the actual administration of Señor Canovas del Castillo, yielding to the prayers of the most influential agriculturists in Spain to afford them greater protection against foreign importations of all descriptions of cereals, flour, lard, cattle, etc., has suddenly seriously increased, from the 1st instant, the late duties against such foreign importations into the Kingdom of Spain.

While the farmers and all others interested in agricultural pursuits in Spain are now jubilant at this late important change in the Spanish customs tariff for their benefit, the consumers, on the contrary, look upon the future in despair, especially those residing in this immediate neighborhood, since they are likely shortly to have to pay dearer for their daily bread, as well as everything else comprising the actual necessities of life.

This protective measure created quite a general stir in this market between the 29th and 31st ultimo, during which days quite a sudden and active demand sprang up for all kinds of cereals, flour, lard, etc., for immediate entry into the Spanish lines and neighboring towns, thereby exhausting, for

the present, the stocks in this market of most all articles of food of daily consumption.

I apprehend, however, that in future the demands upon this market will be seriously diminished, owing to the enormous duties which the Spanish Government has just been induced to levy upon so many important articles of food, which compose the general retail trade of Gibraltar.

The cork industry.—The cork industry in this immediate neighborhood has lately experienced increased activity by further shipments of cork wood from this port for New York, as the returns of exports during the past quarter will show.

No doubt this increase in the shipments of cork wood to the United States is due to the new United States tariff now in force, which increases the duty on all manufactured cork wood and bottle corks, while the article in its primitive state still continues, as hitherto, to be free.

Algeciras Railway.—The work on the railway from Algeciras toward Bobadilla station, on the Malaga road, continues unabated. It is now open to general traffic as far as Jimena.

Coal trade.—The coal trade at Gibraltar has considerably revived since the Spanish ports are again in free pratique with the rest of the Mediterranean and Levant ports. It continues to be the principal item of traffic, wherein the largest portion of the laboring classes are engaged for their support.

Coal-heavers' strike.—Not long since a fresh strike took place, in consequence of renewed litigation between the coal-heavers and some of their foremen, who were supported by the coal merchants. This strike seemed to become so serious, on account of three of the ringleaders having been arrested by the civil police for riotous behavior, that the authorities, in face of the menacing attitude of over one thousand of the strikers, who demanded that the prisoners should be at once released, were induced to have the riot act read, and a company of troops was turned out with their muskets loaded with buckshot to be ready to suppress any further disturbance, which soon had its desired effect, and after the expiration of a couple of days the difficulties were amicably arranged and the work of coaling was duly resumed, to the satisfaction of the community at large.

NAVIGATION TO THE UNITED STATES.

Table showing foreign steam-ships that have called at the port of Gibraltar, with the number of passenger emigrants on board, during the year 1890.

Name.	Nationality.	Where from.	Destination.	Date of clearance.	Number of passengers.
Elysia.....	British	Naples	New York.....	Jan. 13	260
Iniziativa.....	Italian	Sicily.....	do.....	Jan. 16	299
Entella.....	do.....	do.....	do.....	Jan. 31	102
Total.....					661

Table showing foreign steam-ships that have called at the port of Gibraltar, etc.—Continued.

Name.	Nationality.	Where from.	Destination.	Date of clearance.	Number of passengers.
Bolivia.....	British	Naples	New York.....	Feb. 5	295
Letimbro.....	Italian	Sicily.....	do.....	Feb. 13	115
California.....	British	Naples	do.....	Feb. 14	360
Alsatia.....	do.....	do.....	do.....	Feb. 25	255
Total.....					1,025
Italia.....	British	Sicily and Naples...	New York.....	Mar. 2	301
Alexandria.....	do.....	Naples	do.....	Mar. 10	241
Giava.....	Italian	Sicily and Naples...	do.....	Mar. 11	592
Belgravia.....	British	Naples	do.....	Mar. 13	1,409
Neustria.....	French	do.....	do.....	Mar. 14	987
Usozia.....	British	Sicily and Naples...	do.....	Mar. 15	536
Stura.....	Italian	do.....	do.....	Mar. 23	669
Victoria.....	British	do.....	do.....	do.....	1,033
Burgundia.....	French	Naples	do.....	Mar. 27	1,050
Iniziativa.....	Italian	Sicily and Naples...	do.....	Mar. 30	641
India.....	British	Naples	do.....	do.....	773
Total.....					8,232
Pictavia.....	French	Naples	New York.....	Apr. 5	789
Elysia.....	British	do.....	do.....	do.....	846
Britannia.....	French	do.....	do.....	Apr. 15	1,045
Australia.....	British	do.....	do.....	Apr. 18	791
Eutella.....	Italian	Sicily and Naples...	do.....	Apr. 19	753
Washington.....	do.....	Sicily.....	New Orleans.....	Apr. 20	171
Alesia.....	French	Naples	New York.....	Apr. 22	1,063
Olympia.....	British	do.....	do.....	Apr. 23	648
Letimbro.....	Italian	Sicily and Naples...	do.....	Apr. 26	711
Auglia.....	British	Naples	do.....	Apr. 27	670
Total.....					7,487
Bolivia.....	British	Naples	New York.....	May 5	1,005
Caledonia.....	do.....	do.....	do.....	May 7	659
Birmania.....	Italian	Sicily and Naples...	do.....	May 8	666
Assyria.....	British	Naples	do.....	May 10	336
Neustria.....	French	do.....	do.....	May 12	1,081
Trinacrea.....	British	Sicily.....	New Orleans.....	May 18	450
Giava.....	Italian	Sicily and Naples...	New York.....	May 22	428
Burgundia.....	French	Naples	do.....	May 24	1,122
California.....	British	do.....	do.....	May 27	780
Alexandria.....	do.....	Sicily and Naples...	do.....	May 30	250
Alsatia.....	do.....	Naples	do.....	May 31	294
Total.....					7,031
Italia.....	British	Sicily and Naples...	New York.....	June 11	374
Britannia.....	French	Naples	do.....	June 13	789
India.....	British	do.....	do.....	June 23	358
Alesia.....	French	do.....	do.....	do.....	455
Stura.....	Italian	Sicily and Naples...	do.....	June 26	385
Belgravia.....	British	Naples	do.....	June 30	497
Total.....					2,858
Entella.....	Italian	Sicily and Naples...	New York.....	July 2	153
Iniziativa.....	do.....	do.....	do.....	July 16	174
Elysia.....	British	Naples	do.....	do.....	374
Total.....					701

Table showing foreign steam-ships that have called at the port of Gibraltar, etc.—Continued.

Name.	Nationality.	Where from.	Destination.	Date of clearance.	Number of passengers.
Bermania.....	Italian.....	Sicily and Naples...	New York.....	Aug. 2	335
Victoria.....	British.....	do.....	do.....	Aug. 10	601
Letimbro.....	Italian.....	do.....	do.....	Aug. 12	207
Caledonia.....	British.....	Naples.....	do.....	Aug. 31	667
Total.....					1,810
Neustria.....	French.....	Naples.....	New York.....	Sept. 3	695
California.....	British.....	do.....	do.....	Sept. 8	417
Stura.....	Italian.....	Sicily and Naples...	do.....	Sept. 11	400
Burgundia.....	French.....	Naples.....	do.....	Sept. 16	510
Iniziativa.....	Italian.....	Sicily and Naples...	do.....	Sept. 21	273
Australia.....	British.....	Naples.....	do.....	Sept. 22	385
Alesia.....	French.....	do.....	do.....	Sept. 27	890
Total.....					3,570
Elysia.....	British.....	Sicily and Naples...	New York.....	Oct. 1	1,034
Giava.....	Italian.....	do.....	do.....	Oct. 4	409
Eutella.....	do.....	Sicily.....	New Orleans.....	Oct. 7	832
Britannia.....	French.....	Naples.....	New York.....	Oct. 8	568
Birmania.....	Italian.....	Sicily and Naples...	do.....	Oct. 16	348
Belgravia.....	British.....	Naples.....	do.....	Oct. 19	1,097
Letimbro.....	Italian.....	Sicily and Naples...	do.....	Oct. 25	301
Total.....					4,589
Neustria.....	French.....	Naples.....	New York.....	Nov. 2	881
Victoria.....	British.....	do.....	do.....	Nov. 3	627
Karamania.....	do.....	do.....	do.....	Nov. 12	547
Devonia.....	do.....	do.....	do.....	do.....	318
Stura.....	Italian.....	Sicily and Naples...	do.....	Nov. 30	329
Total.....					2,702
California.....	British.....	Naples.....	New York.....	Dec. 3	713
Hindustan.....	French.....	do.....	do.....	do.....	406
Iniziativa.....	Italian.....	Sicily.....	New Orleans.....	Dec. 9	196
Giava.....	do.....	do.....	New York.....	Dec. 19	157
Utopia.....	British.....	Sicily and Naples...	do.....	Dec. 22	449
Total.....					1,921
Grand total.....					42,587

HORATIO J. SPRAGUE,
Consul.

UNITED STATES CONSULATE,
Gibraltar, December 31, 1890.

German pork in Italy.—A decree has been issued by the Italian minister of the interior, admitting into Italy swine meats from Germany, whenever the same are accompanied by proper certificates from the German authorities as to their healthfulness.—AUGUSTUS O. BOURN, *Consul-General, Rome, December 18, 1890.*

IMMIGRATION TO THE AMAZON.

REPORT BY CONSUL KERBEY, OF PARA.

Some time since I received an official communication from the officials in charge of lands and colonization for the state of Para, inviting the aid of the United States consul in compiling for the state general information and statistics that come to the knowledge of this consulate.

I have given this subject of immigration considerable investigation, with a view of advising the Department in regard to the question of the interests of the United States in the development of this wonderful Amazon valley.

A recent publication of the state government, intended to supply all necessary information, has been sent to this consulate. As it is in Portuguese, I have had that part of the document translated which I found most applicable to us.

While Brazil desires and endeavors to stimulate European immigration to her territory, it will be observed that the recent law on the subject, numbered 528, dated June 28, 1890, is more in the interests of south Brazil, and is not at all adapted for attracting immigrants to the Amazon valley.

Since the abolition of slavery, May 18, 1888, the large planters of southern Brazil have found difficulty in obtaining laborers to suit their taste and wants.

The law quoted above, No. 528, promises Government aid for the European emigrants of the Caucasian race, but, until further action is taken by the National Congress, aboriginal Africans and Asiatics are excluded from the benefits of the law and probably, by the most literal interpretation of the law, they are also excluded from this country.

European emigration, as is well known, seeks almost entirely the north and the south temperate zones, while Brazil, which lies almost entirely within the tropics, receives none, comparatively.

It is thought that the more desirable class of emigrants for this climate and latitude may be brought from the Mediterranean. The criticism is made that the foreigners who come to this country from the northern sections do not assimilate with the people and seldom marry or settle amongst them.

It is suggested that a line of French steamers be placed on the route between the Amazon and ports on the Mediterranean, with a view of encouraging and facilitating this class of immigration.

The English steamers to European ports do not pretend to foster immigration. As outlined by the translation from the Government publication, the general plan of Government aid is about as follows: (1) The subsidizing of transatlantic steam-ship lines which bring a minimum of ten thousand immigrants per year to Brazil, (2) the payment of third-class passage for such immigrants on certain conditions, (3) the granting of lands to capitalists or corporations for the purpose of founding colonies of immigrants,

(4) the granting of stipulated amounts of money to said capitalists and corporations for the construction of houses and roads, (5) payment of return passage to Europe for the widows and children of immigrants who may die within a year after arrival in Brazil and for persons maimed by accident within six months after arrival.

The law contemplates both the old planters who may wish to people their plantations with laborers and also speculators who may wish to go into the colonization business. In these two similar cases the aid is only for agricultural laborers and their families, and for artisans and house servants, not including their families.

The exact destination of each immigrant must be known and agreement signed by him before he leaves his native land, and there must also be an agreement signed by the proprietor of the plantation or colony that he will furnish to the immigrants consigned to him the necessary help for their maintenance until such time as they shall be able to obtain it by their own labor.

Without going into all the particulars, the following is the general line of formalities to be observed by a farmer who wishes to emigrate to Brazil with his family and receive the aid offered by the law:

He must first correspond with some planter or colony-planting capitalist or corporation, personally or through an immigration agent, and receive, with the local Brazilian consul's indorsement, a translation of the mutual terms of agreement between the land proprietor and the immigrant.

This document he signs in duplicate, and it entitles him and his family to their passage from the sea-port of his native country to Brazil by any steamship line which has a contract with the Brazilian Government for this purpose. In his family are included his parents, if they are above fifty years of age, as well as his children's children. In case there are cripples in the family, he is entitled to free passage for one cripple for two corresponding able-bodied members in the family.

All these matters must be legally certified to, as well as the ages, parentage, and relationships existing among the immigrants, before embarking.

On their arrival at the Brazilian port they still have right to free transportation as far as to the plantation or settlement for which they are destined by their contract.

There they are to find a house ready for their accommodation, costing \$125, built by Government money, and for which no charge is made to the planter, but which the immigrant pays him for, as the price of it is included in the price of the plot of ground on which it is situated, and which is immediately the immigrant's farm, with a title conditioned on full payment therefor.

The maximum price of uncultivated land for the immigrant is \$5 per acre, and of cultivated land is \$10 per acre. For uncultivated land the owner of the colony pays to the Government about 20 cents per acre.

Fifteen hectares, or about 40 acres, is the size of the farm of wild land allotted to each family. It may be smaller if cultivated, 13 acres being the minimum.

The payment is to be made by yearly installments, the debt drawing a maximum interest of 9 per cent., and the farm being mortgaged to the owner of the colony until the whole amount has been paid.

The owner of the colony is required to advance money for tools, seed, provisions, etc., if necessary, and the price is added to the mortgage on the farm.

The immigrant receives a conditional deed of the land, in which is stipulated the yearly payments to be made, and on which they are indorsed when made. The payment in full can not be required in less than ten years. When all paid up, the immigrant receives a deed in fee simple.

In case the farmer becomes two years behind on his yearly payments, the proprietor of the colony can oust him by paying him for the improvements made and re-imbursing him for half of the amount paid up, after deducting the money advanced for provisions, etc.

If the farmer leaves the lot without the consent of the proprietor of the colony, he can not claim a cent for any thing he may leave behind, and he can not sell or transfer his interest in the land before it is fully paid for without the consent of the proprietor.

The local justice of the peace is to name the arbiter in case of dispute as to the value of improvements that may have been made on the land.

As above stated, the plan is not at all suited to the Amazon valley in its present condition.

From a recent communication from this consulate, consisting of a translation of a series of articles published in the daily newspaper *A Republica* of November 5, 6, and 7, and entitled "Land Property Titles in Para," it will be very evident that with land so cheap and so available for those who wish to buy no sane man would submit to the conditions of that law for the paltry amount required to pay his third-class passage across the ocean. Besides that, the tracts of land available for immediate settlement are narrow, frequently interrupted stretches along the margins of the water-courses. The upland of the Amazon valley is still untouched, except in a few little spots. It is too far from the rivers, and the only roads are the rivers. In fact, nobody knows any thing about the upland, except that it is, for the most part, an unbroken and almost impenetrable forest.

The immigrant to the Amazonian valley has to begin and learn every thing over from the very first, almost from the time of the floods, and the probabilities are that he will "die a-learning." Certain it is that, unless he takes hold of the new (or old) order of things pretty suddenly and possesses a faculty of adapting himself gracefully to circumstances, he will soon declare Amazonia to be the most God-forsaken land under the sun, notwithstanding its rich soil, warm climate, and luxuriant and beautiful foliage. The hot, moist climate enervates foreigners who may come here to settle. Sometimes the immigrants themselves retain most of their native vigor, but their children and grandchildren take on a different type. The period of acclimatization is about two years, after which there is no danger to be apprehended from the yellow fever.

The colony of Americans from the Southern States, which immigrated and settled at Santarem, about 500 miles up the Amazon, has not seemed to thrive; but of this I will be able to report more satisfactorily after I have made them a personal visit in response to a courteous invitation.

As a general thing, a man without capital coming here will have a pretty rough time of it. Within the past few weeks a hundred or more Spaniards and Italians have been sent to Para from points further south, apparently to get rid of them. They had not been contracted for here, but the state government was responsible for their support until they could be provided for in some other way. They were huddled together like pigs in a pen in two houses on the Estrada de San José. They remained there for several weeks at Government expense, and would probably still be there, if they had not become a perfect nuisance by their filthy habits, their thefts and drunken rows and night attacks on passers-by. Then the respective officers divided them up in groups and sent them out along the Bragança Railway, where a little farming is being done on a small scale, and where huts could be found for them. Some of them obtained employment of different kinds; but the "agriculture" which the Government wishes to encourage by this immigration has not been undertaken by them. The probability is that a large share of them will be in the rubber swamps before a year has elapsed.

The one first, last, and only reason why there is almost no agriculture in this valley is because rubber gathering, although more dangerous to health, pays bigger returns for the labor expended than any thing else. This industry keeps a large part of the population at the margins of the rivers and in the swamps, where the malaria eats away their numbers nearly as fast as they flow in from the southern parts of Brazil. India rubber is at present the one great industry of the Amazon, and any who may contemplate coming here to undertake either the gathering or cultivation of the plant are referred to my report on India rubber, dated at this consulate November 26.

Large fortunes have been made and are still to be made in the Amazon valley, but it does not seem immediately available for immigrants. The agricultural possibilities are immense, the soil is fertile, and there are never any frosts or droughts; but on the question of the great resources of the Amazon I have gathered material for another report to follow this.

JOSEPH O. KERBEY,

Consul.

UNITED STATES CONSULATE,

Para, December 9, 1890.

ARTIFICIAL ICE IN THE WEST INDIES.

REPORT BY CONSUL BRADFORD, OF ANTIGUA.

I have the honor to inclose a letter to the hygienic ice companies of the United States, suggesting the establishment of an ice manufactory in these islands. This is an entirely new industry, and will, I have no doubt, pay well in the hands of Americans.

The establishment of the new line of steam-ships from the United States to the Windward and Leeward islands and the erection (soon to be commenced) of a large American hotel at this place will doubtless create a demand for cheap ice, much greater even than now exists.

I may say, in concluding this dispatch, that His Excellency the governor is very much interested in the plan of getting an American company here, and I have little doubt that the governments of the Windward and Leeward islands would pay such company a handsome subsidy.

JNO. S. BRADFORD,
Consul.

UNITED STATES CONSULATE,
Antigua, January 10, 1891.

CONSUL BRADFORD'S LETTER.

[Inclosure in Consul Bradford's report.]

CONSULATE OF THE UNITED STATES,
Antigua, W. I., January 10, 1891.

The very urgent need of a sufficient supply of ice in the West Indies, and especially in the Leeward Islands, and the certainty of adequate remuneration to any company which should establish a plant on this or some neighboring island for the manufacture of cheap ice for the supply of the islands between the Virgin group and Trinidad, have induced me to communicate with you, through the Department of State, and to offer a suggestion that it might be desirable to consider the question with a view to locating a manufactory here.

The population of the two groups forming the Leeward and Windward islands is about 300,000. The numerous public institutions and the Government offices are, however, very large consumers, as are also the sugar planters who reside on their estates. The present supply is in the hands of one man, who, besides his profits, receives an annual subsidy of £200 (\$1,000 nearly) for supplying only a few of the Leeward Islands. The supply is uncertain, exceedingly meager, and excessive in price.

I am in a position to state that, if an American company should elect to establish itself here, it would receive every facility and active aid from Her Britannic Majesty's colonial government.

I offer these suggestions to you, gentlemen, for what you may think them worth, being fully assured, however, that there is here an excellent opening for an enterprising, energetic American company.

JOHN S. BRADFORD,
Consul.

THE SCALE INSECTS IN EGYPT.

THREE REPORTS TRANSMITTED BY ACTING CONSUL-GENERAL GRANT, OF CAIRO.

I. REPORT BY DOCTOR CATELAN, OF FRANCE.

[From the Phare d'Alexandrie of November 5, 1890.—Translation.]

The insects, which at present infest the trees and shrubs in the gardens in Alexandria, belong to a species of pucerons similar, if not analogous, to the plant louse of the apple-tree, (of the *schizoncra* kind).

This puceron, whatever may be its origin, appears to attack many kinds of plants—mulberry-trees, sycamore-trees, pepper-trees, magnolia-trees, rose-trees, etc. Like all kinds of pucerons,

it secretes a sugary liquid, which spreads over the leaves and shoots, falls drop by drop on the ground and the herbaceous plants, where it is soon converted into a black granulous matter (honey-dew), which is constituted by an active vegetation of mushrooms, which themselves cause the decay of the plants, just as the insect destroys the leaves of the trees on which it deposits its secretion. This sugary substance draws a great number of insects from all around, particularly ants, which are very fond of it. This is why several gardeners whom I have questioned believe that ants come to couple with the puceron for its reproduction. This is a great error.

This insect is wingless and viviparous. Eight or ten times during the summer each female can deposit small living pucerons, which feed on, and are developed in, the sugary substance. But this is not the only mode of reproduction. A great number of females pass through a second metamorphosis, when they take very fine membranous wings, which enable them to go to the neighboring trees or to be carried by the wind to some distance.

As soon as the latter are settled on the trees, they lay eggs which produce the viviparous females, and the latter recommence the cycle of successive reproductions. At this moment on the trees, and more especially on the leaves, the puceron is seen under the aspect of a white flaky mass, nearly always adhering to the backs of the leaves.

The body, which measures as much as $2\frac{1}{2}$ millimeters and even more, is soft reddish-yellow in color, and, so to speak, lost in white sticky wool, formed by a waxy matter which water does not penetrate. This wax is secreted through the skin of the animal as a protection against water; it is simply a mantle for protection. The insect is globulous, of an oval form, and is provided with three pairs of legs, from two to four antennæ, and a sharp sucker, with which it attacks the leaves and the outside of the young shoots, where it settles. As said above, a female can lay eggs as many as eight or ten times during a summer season, and these thousands of small pucerons, which grow very rapidly, lay eggs in their turn a certain number of times. This is what explains such rapid invasion over such extensive areas, although the animal is endowed with very slow movements and is restricted, relatively, to limited distances.

At the end of autumn or at the beginning of winter the female lays a single egg, which she deposits within the bark and dies. This egg is hatched in spring and produces a viviparous puceron without wings resembling those described above, and which recommences laying eggs and produces millions of living insects, which, in their turn, bring the contingent of their layings. Such are the great series of reproduction through which the insect passes. It has been studied and observed in France, in the neighborhood of Montpellier, by Mr. Lichtenstein. There it attacks almost exclusively apple-trees and a few similar fruit-trees. It is said that it was imported from Canada with cuttings of apple-trees about one hundred years ago.

Besides fumigation, whitewashing the trunks of the trees affected has for a long time been practiced in those regions to prevent the winter egg from hatching.

To effectually prevent the propagation of the insects, it is indispensable to destroy as much as possible all herbs, branches, and leaves which give refuge to the viviparous female.

To be effectual, this operation should be performed at the beginning of winter and spring, and it is necessary to burn on the spot fallen leaves, and also the annual and perennial herbaceous plants on which the sugary secretion is spread and where the young ones take refuge.

Finally, the most important operation is to stop the hatching of the winter egg. As it is probable that the bark of the surface roots of the trees and the perennial plants, turf, and shrubs growing under the infected trees serve as a refuge to these eggs, it can not be hoped to destroy them all, even with the minutest care, during a single season; but probably there would be a considerable diminution of the spring laying and the multiplication of the insect. In France the arboriculturists have often succeeded in efficaciously preserving fruit-trees by applying an oily coating, with which they cover the trunk of the tree and principal branches before the rising of the sap, about which time the hatching takes place.

2. DR. OSMAN BEY GHALEB'S REPORT.*

[Translation.]

From examinations of the insect sent from Alexandria, it appears that it is a variety of membranous insects, called *Coccus athonitum*. The insect in question lives on leaves and barks of plants; it sucks its nourishment from their sap. It is thought that it comes from Senegal, whence, no doubt, it was imported into Europe with various plants. At present it infects the roots of many plants originally from Europe. It may be said that it was introduced into Egypt on plants sent from Europe by agriculturists. There is a male and a female. The skin of the back, as well as that on the belly on the lower part for half the length of the insect, secretes in great quantity a waxy matter, in which the female lays her eggs, the covering of which resembles a sieve. Shortly after the hatching takes place the young insects are subjected to ordinary metamorphosis until they attain their perfect formation; then they are developed and recommence the cycle of reproduction.

This insect multiplies very rapidly. Its body is of an orange yellow color, which has a characteristic shade. In Europe they employ for its destruction water mixed with nicotine, with which they sprinkle the infected plants. The use of these means being very difficult in Egypt, it is preferable to have recourse to the procedure proposed by His Excellency Osman Pasha Orphi, which is to sprinkle the plants with lime-water and by applying to the trunk a layer of tar in order to prevent the insect from descending to the ground and destroying the roots.

3. DISEASE OF TREES.

[From the Phare d'Alexandrie of November 5, 1890.—Translation.]

We continue to publish to-day communications received in regard to the disease of trees which is ravaging the trees in our gardens and promenades. This question is one of great interest.

We believe, therefore, we are doing a useful service in placing before the eyes of our readers the two preceding reports of two doctors whose competence can not be doubted. In fact, the first was written by Doctor Catelan, sanitary doctor in France, and the second by Dr. Osman Bey Ghaleb, professor of natural history in the medical school at Cairo.

NATURAL PRODUCTIONS OF THE AMAZON VALLEY.

REPORT BY CONSUL KERBEY, OF PARA.

It will be readily understood that practically there is no end to either the abundance or the great variety of valuable natural productions of the Amazonian valley, the wonderful extent of which is but slightly touched.

The flora of Brazil is especially rich in plants producing available textile fibers.

The Baron of Marajo, formerly president of the province of Para, late commissioner from Para to the Paris Exposition of 1889, and now mayor of this city, has published an excellent monograph on the textile fibers displayed at that exposition, and especially those of Brazil, which book the baron has kindly sent to me.

* Dr. Osman Bey Ghaleb is professor of natural history in the medical school at Cairo.

He mentioned fifty-four distinct species of plants and trees, some of them having many subvarieties, all of which yield valuable textile fibers, and most of which are indigenous to the Amazon valley, all of which grow here and are available for an infinite variety of manufactures, such as cloth, cord, ropes, mats, hats, baskets, etc.

One can not read the list without being profoundly impressed with the immense natural richness of the forests and soil of this valley, and it seems that textile fibers must soon become one of the valuable exports of the valley. At present the only one exported is the piassava, known in commerce as Para grass, or monkey grass. It is not a grass at all, but the vascular fibers of the leaf sheath, or bract, of the urucury palm (*Attalea excelsa*). This is used extensively for ropes, mats, brushes, brooms, etc.

The woods of these forests are also of immense variety, and many of them are very valuable. Some varieties are used as piles and also as horizontal bases beneath the soil for the foundation of heavy stone and brick buildings, and will last for centuries. They are practically indestructible in this climate, where most North American woods will not last six months exposed to the same conditions.

The greatest difficulty which attends lumbering here is the fact that the valuable woods are scattered through the forests at comparatively long intervals. Instead of having homogeneous forests, as are the pineries of North America, on a single acre of ground there may be fifty different varieties or species of trees. As the valuable trees grow solitary, and the forests are jungles, and indefinitely long roads must be made to reach the individual trees, the cost of getting out the logs is immense. At Santarem the most valuable wood for building steam launches grows on the highlands, which there are not very far from the river, only 5 or 6 miles away. The tree is felled, and the trunk is split in the middle, and each half is hewed down to the thickness of a plank, each tree making only two planks; these are then carried by men a mile or two, sometimes to reach a point where they can be loaded upon a cart. In general, the forests are still more inaccessible than at Santarem.

The Bragança Railway, starting from Para and running through the upland forests, has given an opportunity to reach a timber supply for this city which will supply the demand for a short time. But the same difficulty prevails along the line of this railway; each tree must have its own road cut to get out to the railway.

Some of the saw-mills that exist in the Amazon valley are supplied mostly by trees that drift down the current, torn up by the roots by the yearly floods, so that "logging" on the Amazon is quite a different thing from what it is in the pineries of Wisconsin and Michigan, it being done in a canoe in a 4-mile current with a rope and a cross-cut saw.

This will serve to illustrate how almost every industry here is vastly different from other lands. You can not introduce American methods into these industries generally any more than you could use a bob sled for logging on the Amazon.

The gathering of Brazil-nuts is quite an extensive industry during two months of the year, the total exportation being about 8,000,000 hectoliters per year.

Tonquina, or tonka, beans are also exported to a limited extent, as also is balsam of copaiba. Hides and deer-skins are sent to the United States, likewise eiqutte feathers, as well as whole birds, especially parrots of different kinds and monkeys of varied accomplishments, the latter two being valued at \$5 to \$10 each, according to the value set upon the pets by the native owners.

There are known to be rich deposits of gold on some of the tributaries of the Amazon in the highest altitudes, but the long distances and the interventions of the rapids, which interrupt the navigation for part of the year at least, have been a great barrier to their developmeft.

It is asserted that there are also rich coal deposits on the Amazon, but it seems that the wealthy corporations requiring a coal supply have not yet found it advisable to depend on other than the home resource.

JOSEPH O. KERBEY,

Consul.

UNITED STATES CONSULATE,

Para, December 16, 1890.

THE SPANISH MERCHANT MARINE.

REPORT BY CONSUL BOWEN, OF BARCELONA.

STEAMERS.

The number of steamers that are now engaged in trade and that belong to Spain and the dependencies thereof is 418, having a capacity of 410,524 tons and 71,834 horse-power. Of that number, Barcelona is represented by 84, having a capacity of 152,025 tons and 22,054 horse-power; Bilbao is represented by 103, having a capacity of 135,217 tons and 16,145 horse-power.

SAILING VESSELS.

The total number of sailing vessels belonging to Spain and the dependencies thereof is 57,615, having a capacity of 492,151 tons. Of these vessels, 1,258 are of over 50 tons and 56,357 are of less than 50 tons each, and 244 belong to Barcelona, 120 to Bilbao, 123 to Majorca, and 274 to Manila.

HERBERT W. BOWEN,

Consul.

UNITED STATES CONSULATE,

Barcelona, December 2, 1890.

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES.

No. 126.—MARCH, 1891.

ISSUED FROM THE BUREAU OF STATISTICS, DEPARTMENT OF STATE.
ALL REQUESTS FOR THESE REPORTS SHOULD BE AD-
DRESSED TO THE SECRETARY OF STATE.



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CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 126.—MARCH, 1891.

EXPORTS FROM HUDDERSFIELD TO THE UNITED STATES.

REPORT BY COMMERCIAL AGENT SMYTH.

PLUSH.

Of the various industries affected by the new tariff, the seal-plush trade is hit the hardest. From \$229,587 for the quarter ended June 30 it dropped to \$142,729.46 the following quarter, while in the next quarter ended December 31 it shrank to a nominal showing of \$12,904.36. Here is a shrinkage of \$216,683.38 in the short space of 6 months, representing a decrease in this item alone of nearly 95 per cent.

WORSTEDS.

The worsted trade, which in the June quarter footed up a total of \$745,648.80, dropped in the December quarter to \$428,616.87, being a decrease of over \$317,000, or nearly 43 per cent. The worsted values for the last quarter, compared with those of the preceding, show a falling off of over \$173,000, or nearly 30 per cent.

WOOLENS.

Woolens, which started off in the first quarter of the year with a gross value of \$77,692.70, jumped up to \$245,314.76 the next quarter, dropped to \$106,359.30 the following, and still lower in the quarter just closed, the gross values being \$98,114.29, a decrease of 60 per cent. as compared with the returns ending June 30.

CHEMICALS.

The chemical exports present a better showing, the total for the year being \$111,640.98. These exports largely consist of dyes and other preparations for use in the textile industries of the United States.

Cards and card clothing form another item of export which have a similar connection with American industries, and their increase may be viewed with some degree of satisfaction as an indication that those industries are correspondingly prosperous.

MOHAIR, ETC.

The spaces set apart for various mixtures of mohair, cotton, etc., remain unfilled in the December columns. The item of "thread waste," which amounted to \$4,555.75 in the September quarter, also disappears. Mohair pure and simple, which seems to have made a poor struggle for export during the year, also vanished in the December quarter.

WOOL.

It will be observed that wool took a regular tumble in the last quarter, falling from \$36,745.93 in the preceding quarter ended September 30 to \$7,280.13 for the last quarter ended December 31. The quality of wool shipped from here to the United States is what is known as a pure colonial or Australian, commonly called "Sydney." It commands the highest price in the London market, whither it finds its way from the colonies and the hands of English buyers, who are out there expressly for that purpose. London is the great central depot or distributing point, whence it finds its way to the markets of the manufacturing districts, where it is used up in the finer class of worsted and worsted goods.

THE WOOL MARKET.

As an example of the multifarious ways in which the influence of the tariff bill is asserting itself, it may be stated that the moment its provisions went into effect in this section the wool market fell flat in anticipation of serious depression in the worsted and woollen trades. The spinners of woollen and worsted yarns, of whom there are a great many, with very extensive mills and large pay rolls, felt the shock, too, and soon joined the excited crowds at Bradford and elsewhere to wonder how such things could be. The dyers who dyed these yarns and cloths and the manufacturers who supplied them with the material soon realized that the tariff had hit them, too, and so they fell in with the others. The whole took the form of a demand for a zollverein.

But the strange feature of this wool business is presented in the round-about way in which the American consumer obtains it. This has reference more particularly to the \$37,000 worth of wool which was exported from this district during the year 1890, not a pound of which was British. It is bought in Australia, shipped to London, put on the markets there, purchased, and put on the market here, where it is again purchased by the American consumer and then dispatched to the United States, to be used in the manufacture of fine fabrics. With an increased demand for those fine American fabrics, there must be a corresponding demand for this fine colonial wool, which seems to have the exclusive call as a basis of their manufacture; and the question naturally arises, will it not pay the American consumer, who

must have this wool in preference to his own, to adopt a new system of buying whereby he can get closer to first hands and first prices? The London wool market is not without its intrigues and manipulations, and the provincial buyers have generally to pay well for these interesting proceedings, and so does the man who comes after him—the American consumer—and double at that. At the present, however, it looks as though we have here a singular example of the force of that Irish saw, “the longest way around is the shortest way home,” particularly to the American who buys Australian wool in the English provinces. It may be stated here that southern and western Australia exported to this country in 1889 no less than \$3,750,000 worth of this “pure colonial.”

BRICKS.

The brick trade, which is an interesting item to some of the western cities, notably St. Louis and Chicago, justly famous for the perfection to which the manufacture of all kinds of brick and terra cotta work has been brought by their local concerns, is represented by a gross total of \$31,176.16 exports for the year. The bricks are mostly of the glazed species intended for interior decoration or linings for halls, lavatories, baths, etc. There are some fire brick of an exceptionally good quality, whether from the adaptable qualities of the native clay or the peculiar process of manufacture I am unable to say. It is a fact, however, that the product of an establishment on the outskirts of Huddersfield finds a market all over the continent of Europe. Two members of the firm (Brooke & Sons) who recently visited the United States with the Iron and Steel Institute are quite enthusiastic over the splendid advantages which America offers to a business of this character. They believe there would be no difficulty whatever in finding a suitable location and the requisite quality of clay, and, these found, the process would be quickly furnished with the plant and the machinery. The American purchaser of this class of exports has to pay nearly twice as much for freight and transportation expenses as his goods cost him. The freight alone on 11,000 of these bricks from Huddersfield to Liverpool, with incidental costs for handling, etc., amounts to nearly as much as that involved in the transfer from Liverpool to Chicago or St. Louis. Such charges will appear exorbitant when it is pointed out that the distance between Huddersfield and Liverpool can be traversed by an ordinary express train in an hour and forty minutes, regular schedule time. It is quite natural, therefore, to find an extensive industry like this, which has to cope with the disadvantages of a railroad pool, high rates, and dictation, turning its eyes to the United States, with its rapid strides in every department of trade, particularly the building trade, to seek a permanent location for the manufacture and sale of its products.

WILLIAM P. SMYTH,

Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,

Huddersfield, January, 1891.

THE COMMERCIAL SITUATION IN YORKSHIRE.

REPORT BY COMMERCIAL AGENT SMYTH, OF HUDDERSFIELD.

A general survey of the commercial situation here is calculated to impress the observer with the severity of the check which the new tariff has imposed on British trade. Yorkshire feels it keenly, for within its borders are located some of the leading industries of the nation. These industries are brought under the ban of its provisions, and the result is clearly set forth in the general statement of exports for the year. Never in the history of British trade has a commercial policy been enacted which has operated so sharply against its interests, and assuredly never has there been an act of legislation to arouse such intense and widespread hostility among British trades. It operates most severely, perhaps, with the export trade of Bradford. It had been in operation but a couple of weeks when its extensive trade in stuffs and cheap woollens vanished like Aladdin's castle. Its seal plush trade went the same way, and a general conflict was immediately precipitated between the employers and their workmen on the question of reduced wages. The Listers' plush concern at Manningham, near Bradford, is now closed against its 4,000 hands, who are out on one of the most notable strikes of the year. Industrial interests at Sheffield are in a very disturbed state. The cutlery trade is badly shaken up, and the reduction move is on there with the usual result. Some of the largest mills in this district are practically running, to make a show of activity, on short time, while a number of the smaller concerns are either shut down altogether or contemplating retirement from business.

There is a great deal of hardship among the working classes throughout the manufacturing districts of Yorkshire, consequent on the want of employment and the necessary means to counteract the severity of the winter, which is said to be the coldest in 40 years. The banks, determined to be on the safe side, are tightening up their purse strings. Two heavy failures are reported from the Leeds district, both in the woolen trade. Commercial disasters like these, in presence of a bleak and barren prospect, are not calculated to relieve the situation of its extremely serious and discouraging aspect.

It must be remembered that this depression has usurped the busiest season of the year. Merchants and manufacturers who meet here on market days to transact business and exchange views regard the situation very gravely. They make no effort whatever to conceal the fact that the tariff bill is responsible for the deplorable condition of the market. The press, of course, is still screeching and howling for relief or revenge or retaliation, anything at all, even a zollverein, to get even with "the Americans." One of the leading Yorkshire dailies, published at Leeds, takes up the question for the Bradford and Sheffield people. It sneers at "American shoddy" as a soothing reference to the pure woollens of Bradford and makes a vindictive attack

on the American table knife by way of a compliment to the Sheffield manufacture. It is too much the fashion for English editors at the present moment to attack everything American, as well as to charge the McKinley act with responsibility for every known form of disturbance—social, political, and commercial—which has taken place since it went into operation.

THE TARIFF AT BRADFORD AND SHEFFIELD.

[From the Yorkshire Post.]

So far as can be judged at a distance, the trouble which has arisen between employers and work people at Bradford and at Sheffield as the first fruits of the McKinley tariff ought not to be more than a momentary difference. At Bradford the operatives at the Manningham mills, who have to do with the goods prepared for the American market, are asked to submit to a reduction of wages which will still leave them better paid than the work people of any other firm in the town. We do not know what Messrs. Listers' operatives have to say for their action in striking, but most common-sense people will want to know why they should be asked to sympathize with them in the face of an admitted fact like that. If the effect of the McKinley tariff were to inflict nowhere greater hardship than it appears to inflict upon a few hundred hands in the Manningham mills, it would be an agreeable discovery for most of us. That Messrs. Listers' trade with the United States has been cut to pieces by the new tariff may be gathered from the returns which we published a week ago from the United States consul at Bradford, and which showed that the imports of silk seals, plushes, etc., had fallen from £28,363 in December, 1889, to £5,289 in December, 1890. This may be an exceptional record, due to more than one cause; but it is, at all events, enough to justify Messrs. Listers in the statement that their American trade has been heavily injured by the new tariff, and, if the operatives suffer no severer penalty than that of being paid better wages than the employés at any other mill in Bradford, they will still have much on which to congratulate themselves. As to the Sheffield dispute, that has as yet scarcely advanced to a point at which it is possible to form a safe conclusion. Messrs. George Wostenholn & Co., whose trade mainly consists of pocket cutlery manufactured for the American market, have given their forgers, grinders, and cutlers notice of a reduction of 5 per cent. in wages, in view of the increased tariff. It remains to be seen, as we have said, what real relation this reduction bears to the wages of the men or to the actual requirements of competition. But we shall be surprised if the slight extra duty imposed on pocket cutlery by the McKinley tariff should have any serious effect upon the class of trade done by Messrs. Wostenholn & Co. Travelers in the United States testify that, except where imported wares are found, American tables are furnished with the worst cutlery in the world. In the commoner classes of knives it is long since Sheffield houses had a chance in the United States; but Americans know first-rate cutlery when they see it, even if they can not make it, and we suspect that the class of people who now use Sheffield cutlery will not be coerced into patronizing the native knife—a most fearful and wonderful weapon—by the extortion of another 10 or 15 per cent.

The same writer goes on in an article of recent date to discuss the same subject and does it as follows:

The history and application of the McKinley tariff is, in other respects, an interesting study. In more than one way it illustrates with quite convincing power the utter rottenness of the American political system. Among the causes which led to the Republican defeat of 1890 were the undignified squabbles which arose as to the division of the spoils of office, the extraordinary fecundity of the then Administration in jobs bad enough to shock even the seasoned susceptibilities of Americans, and the way in which the people were taxed to provide pensions for partisans. Here in England we do not always realize the beauties of American rule, but the Federal pension list charmingly illustrates one side of it. The money spent on that list in 1889 was nearly equal to the entire sum demanded by the whole of our civil service,

and even exceeded the complete expenditure of the Federal Government in the year 1860. Again, the way in which the States are paying off their national debt sometimes calls down unpleasant comparisons with ourselves. But a portion of that debt was created for no other purpose than to provide opportunities for capitalists. Even now the payment of the debt is anticipated at extravagant terms for precisely the same reason; and, to find money to fill the pockets of the capitalists in this fashion, the people are taxed to the very last extremity. All this, let us observe, happens in a land which begs heaven and earth to remark its freedom, which derides the more orderly progress of the unenlightened Britisher, and believes that wisdom is hardly found outside the United States. One of the worst features about the policy of Mr. Gladstone is that it acknowledges and condones some of the evil characteristics of American political life. The artisan who is invited to support that policy can hardly do better than mark the personal and political dishonor, the moral chaos, and the commercial peril into which such methods have already driven the United States.

TRADE AND THE LABOR MARKET.

The state of the labor market is so closely allied with trade matters in general that a report on the subject furnished to the Board of Trade Journal will not be out of place here. It is as follows:

WORK INTERRUPTED.

It is not possible this month, in presenting any remarks on the state of the skilled labor market, to assume for a moment that they contain any adequate representation of the condition of the general labor interest of the Kingdom. In an ordinary way it may generally be taken for granted that, when all the skilled trades sending in returns to the board of trade are prosperous, the same will hold good of the general industries of the nation. This month, however, special circumstances prevent any such assumption. This is the month when, even in respect to indoor trades, which may be carried on without regard to the weather, many special causes of want of work combine to throw men temporarily out of employment. Of these, holiday suspensions form an important element even in the best of times. Now, however, in addition, we have had 6 weeks of weather so severe that even indoor industries are being considerably affected by the stoppage of their supplies of raw material, the means of transport being interrupted. But it is in the building trades and other outside occupations in which this prolonged severity of the weather has been most keenly felt, and in these a vast amount of unskilled labor is concerned of which no account can be definitely taken, as no returns can be supplied in respect to it. Any attempt to estimate the great numbers of men thus out of work and unprovided for by trade unions or other agencies of self-help would be vain, as there is absolutely no available material likely to form a reliable basis for such a speculation. It is therefore to be understood that this memorandum refers only to the comparatively limited number of skilled trades which keep account of the monthly number of their out-of-work members and make returns of the same to the board of trade.

STRIKES.

The total number of strikes fortunately shows no tendency to increase, although the great railway strikes in Scotland affect, directly and indirectly, a very large number of workers. The total of strikes noted during the past month was sixty, one less than in the previous month, but a considerable decrease on the numbers of some previous months. Of these, fifteen were in the cotton trade, and these resulted chiefly from a difficulty of settling the details in individual cases and the general advance of 5 per cent. obtained by the action of the organizations of the operatives. There were six in the tin plate trade and five each in the iron and steel, engineering, coal, and woolen trades; in dock labor there were four, the remainder being distributed among miscellaneous trades.

DECREASED EMPLOYMENT.

Twenty-two trade unions of skilled operatives have sent in returns as to the state of their respective industries. A few show a slight improvement, but the majority show a marked falling off, consequent on the causes already referred to. The total membership of these societies is stated at 239,960, and of these 7,302 are returned as unemployed. This is a proportion of 3.05 per cent., as against 2.04 per cent. in the month preceding. As compared with the corresponding period of previous years, it may be said that in January, 1890, the percentage of men out of work in these trades was 1.7; in January, 1889, 3.3; January, 1888, 6.9; and in January, 1887, 8.7. The trades showing most improvement are the cotton-spinning and ship-building trades, the proportion of those out of work in the last-named industry having improved during the month from 5.76 per cent. to 4.27 per cent. Most of the other trades show worse results, but in no case can the change be pronounced serious when all things are considered. In the building trades, in many districts, there has been an almost entire stoppage of work from severe weather.

THE HUDDERSFIELD BOARD OF TRADE.

Unlike commercial bodies in other English cities where the local industries are affected by the tariff bill, the Huddersfield Board of Trade maintained a dignified attitude towards the United States. It waited until the year 1890 was well laid away, when the issue had been squarely made up and the result plainly before them, and then had its say. It refused to be drawn into the noisy ways of Bradford and Sheffield, preferring to operate on a line of its own, without committing itself in manifestoes and resolutions that might be all useless, if not injurious. When the time for the annual dinner was at hand, the members met, had their say about trade and the tariff in an easy, old-fashioned, sensible way, and then promptly adjourned to the more congenial atmosphere of the festive board. It is said this body is not given to frequent violent moves, but that when it does make one—at the end of the year, for example, in presence of a good dinner—something is heard to drop. The president, Mr. J. H. Sykes, is a large manufacturer and a very intelligent and clever gentleman. He is capable of discussing the tariff in a sensible, manly way, and equally capable of viewing its effect here with a complaisance that is strongly in contrast with the spirit displayed in Bradford and Sheffield.

WILLIAM P. SMYTH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Huddersfield, January, 1891.

MEXICAN ORE SHIPMENTS TO THE UNITED STATES.

REPORT BY CONSUL SMITH, OF NOGALES.

I have the honor to inclose herewith a report of ores passing this consulate during the year 1890, showing the amount and value for each month in the year. It will be seen that the month in which the new tariff bill became a law (October) was in amount the third largest and in value the second largest of the year. Usually during the month of June those interested in

mining aim to clean up everything for the year, which accounts for that month being the largest. The months of July and August are usually quite small, as the feed for freight animals is very short, and consequently shipping is almost suspended. As a general thing, the ore is shipped from the mines to the railroad on pack mules, the distances ranging from 15 to 100 miles.

About 4 per cent. of the value of these ores was for lead and copper contained therein, the balance being gold and silver, chiefly the latter.

Quite extensive arrangements are being made for large shipments of ores during this year, and it is presumed they will more than double those of 1890. Shippers have made considerable complaint to me of what they consider exorbitant charges for sampling and assaying and the taking of excessive samples by the United States authorities. It would seem that this matter should be arranged so as to limit the amount to be taken as samples to the actual necessities, for it will be seen that the average of the ores last year was upwards of \$219 per ton.

Table showing the quantity and value of ores passing Nogales consulate from Sonora, Mexico, during the year ended December 31, 1890.

Months.	Quantity.	Invoice value.
	<i>Pounds.</i>	
January.....	836,115	\$87,637
February.....	771,000	87,796
March.....	889,800	88,492
Total.....	2,496,915	263,925
April.....	1,259,573	118,880
May.....	770,000	70,096
June.....	1,409,800	139,899
Total.....	3,439,337	348,875
July.....	616,769	60,275
August.....	155,000	22,283
September.....	1,027,652	123,453
Total.....	1,799,421	206,011
October.....	1,195,700	149,588
November.....	768,340	90,782
December.....	974,770	110,384
Total.....	2,938,810	350,754
Grand total.....	10,674,519	\$1,169,565

* The average value was 10.9556 cents per pound.

DELOS H. SMITH,
Consul.

UNITED STATES CONSULATE,
Nogales, January 9, 1891.

ITALIAN EMIGRATION.

REPORT BY VICE-CONSUL-GENERAL WOOD, OF ROME.

From an official statement giving the result of Italian emigration during the 6 months ended July 30, 1890, it appears that the total number of emigrants was 138,423, an increase of 14,638 over the first 6 months of 1889.

The following tables show the total number of emigrants from the various districts of the Kingdom:

Table showing the emigration from Italy during the period of 1889-'90.

District.	Six months ended June 30, 1889.			Six months ended June 30, 1890.		
	Permanent.	Temporary.	Total.	Permanent.	Temporary.	Total.
Piedmont.....	4,603	8,488	13,091	5,890	8,838	14,728
Liguria.....	2,037	338	2,375	2,043	299	2,342
Lombardy.....	5,811	7,575	13,386	5,878	8,049	13,927
Venetia.....	10,604	49,330	59,934	2,103	56,152	58,255
Emilia.....	2,653	1,822	4,475	1,174	1,234	2,408
Tuscany.....	1,966	1,836	3,802	2,275	1,888	4,162
Marches.....	1,206	121	1,327	602	85	687
Umbria.....	26	9	35	216	36	252
Latium (Rome).....	26	4	20	15	12	27
Abruzzo and Molise.....	4,033	166	4,199	6,708	757	7,465
Campania.....	6,237	565	6,802	14,510	1,023	15,533
Apulia.....	548	642	1,190	604	1,013	1,617
Basilicata.....	3,374		3,374	4,995		4,995
Calabria.....	5,661	9	5,670	7,030	430	7,460
Sicily.....	2,335	1,728	4,063	2,494	1,979	4,473
Sardinia.....		42	42		62	62
Total.....	51,110	72,675	123,785	56,567	81,856	138,423

District.	Difference in 1890.		
	Permanent.	Temporary.	Total.
Piedmont.....	+1,287	+ 350	+ 1,637
Liguria.....	+ 6	- 39	- 33
Lombardy.....	+ 67	+ 474	+ 541
Venetia.....	+8,501	+6,821	- 1,680
Emilia.....	+1,479	- 588	- 2,067
Tuscany.....	+ 309	+ 52	+ 361
Marches.....	+ 604	- 36	- 640
Umbria.....	+ 190	+ 27	+ 217
Latium (Rome).....	+ 1	+ 8	+ 7
Abruzzo and Molise.....	+2,675	+ 591	+ 3,266
Campania.....	+8,303	+ 428	+ 8,731
Apulia.....	+ 56	+ 371	+ 427
Basilicata.....	+1,621		+ 1,621
Calabria.....	+1,369	+ 421	+ 1,790
Sicily.....	+ 159	+ 251	+ 410
Sardinia.....		- 20	- 20
Total.....	+5,457	+9,181	+14,638

Table showing number of emigrants in each year ended December 31, from 1876 to 1889, inclusive.

Year.	Permanent.	Temporary.	Total.
1876.....	19,756	89,015	108,776
1877.....	21,087	78,126	99,213
1878.....	18,535	77,733	96,268
1879.....	40,824	79,007	119,831
1880.....	37,934	81,967	119,901
1881.....	41,607	94,225	135,832
1882.....	65,748	95,814	161,562
1883.....	68,416	100,685	169,101
1884.....	58,049	88,968	147,017
1885.....	77,029	80,164	157,193
1886.....	85,355	82,474	167,829
1887.....	127,748	87,917	215,665
1888.....	195,993	94,743	290,736
1889.....	113,093	105,319	218,412

CHARLES M. WOOD,
Vice-Consul-General.

UNITED STATES CONSULATE,
Rome, October 20, 1890.

MEXICAN ORE SHIPMENTS TO GERMANY.

REPORT BY CONSUL FECHET, OF PIEDRAS NEGRAS.

I have the honor to inform the Department that there were shipped from this port on December 19, under consular seals and manifests, in bond in transit to the port of New Orleans, La., for shipment to Hamburg, Germany, seven cars of silver lead raw ores, aggregating 115,738 tons and \$19,-380.27 in value.

This ore averaged, as per manifests, 174.49 ounces of silver and only 3 per cent. of lead per ton. The duty under United States tariff laws on the 6,944 pounds of metallic lead contained in the entire tonnage would have been, at 1½ cents per pound, only \$104.16, or less than \$1 per ton. This would seem to show that this shipment of raw ores was not made to Germany by reason of the duty under our tariff. I am reliably informed that a company has been formed in Hamburg, Germany, to purchase raw ores in Mexico and ship to Hamburg for reduction, and this is the initial shipment.

Through rates on ores to Hamburg are \$14.80 per ton from Mapimi station on the Mexican Central Railroad, in the State of Durango. The route is all rail to New Orleans and from thence by steamers.

From the same point to Kansas City, Mo., rates are \$11.60 per ton, or, adding the duty of 90 cents per ton for 3 per cent. of lead had this shipment gone to Kansas City, we have \$12.50 per ton as compared with \$14.80 to Hamburg.

These figures are so very much in favor of shipments to the United States that it is plain we must search outside of the United States tariff laws to dis-

cover why ores should be shipped to Germany that were formerly shipped to the United States for reduction.

This cause, as definitely as can be ascertained, and the one assigned by the shippers, is the prohibition by the Treasury Department of the United States against the mixing of ores from different mines to form one lot for shipment and export.

Ores found to be mixtures pay a duty of $1\frac{1}{2}$ cents per pound, or \$30 per ton. Ore-buyers claim such a restriction is prohibitive on the output of small mines that must be aggregated to make up a shipment.

As this is the first shipment by rail routes to the United States of crude ores from Mexico to Europe, passing through the United States in bond, it has seemed of sufficient commercial importance to report in detail to the Department.

EUGENE O. FECHET,

Consul.

UNITED STATES CONSULATE,

Piedras Negras, December 24, 1890.

OPENING FOR AMERICAN GOODS IN BAHIA.

REPORT BY CONSUL BURKE.

There are some branches of manufactured goods imported to this city, chiefly from Europe, that our manufacturers might seek to obtain, might push for, and, if able to compete with the foreign manufacturers, that is, the European, secure the largest share of the trade. Perhaps it may not be out of place to mention the principal ones: Umbrellas and parasols are used by rich and poor in sun and rain, all imported; ladies' and gentlemen's fine shoes, imported. Cotton and woolen goods for household use and wear constitute a very large share of the importations. Crockery, glassware, lamps, hardware, perfumes, silks, fancy dressgoods, and gentlemen's furnishing goods are in demand at all times. In these articles there is a large field for our manufacturers. European manufacturers of these articles have the field now. In canned fruits and meats there is a chance for our manufacturers to develop a business also. These are some of the principal lines of trade now going to Europe that we ought to have.

I will make a list of the principal dealers in these different lines of trade and forward to some New York journal of export, that our manufacturers may know with whom to correspond if they wish.

DAVID N. BURKE,

Consul.

UNITED STATES CONSULATE,

Bahia, November 25, 1890.

RAILWAY EXTENSION IN SOUTH AFRICA.

REPORT BY CONSUL HOLLIS, OF CAPE TOWN.

December, 1890, will be memorable in the annals of South Africa for three important railway extensions, either of which 5 years ago would have been considered on its completion sufficient ground for complacent gratulation.

These three important extensions comprise the completion of the lines from Simon's Town to Cape Town, by means of which the naval station of Cape Colony is brought into close connection with the capital, augmenting the strength of the defenses of the colony to no small degree. This line is 22 miles in length and passes through several beautiful suburban towns which line its whole length.

The next important extension is that of the main line (the northern) into the interior, which a little more than a year ago terminated at Kimberley, the center of the famous diamond region, 647 miles from Cape Town, now has been opened to Vryburg, 126 miles distant from Kimberley, and is being pushed with diligence to Mafeking, a further distance of 100 miles. By this extension the time occupied by coach in going to the gold fields of the Transvaal, *i. e.*, Johannesburg, has been reduced from 54 hours (from Kimberley to Johannesburg) to 32 hours (from Vryburg to Johannesburg).

The advent of the British South Africa Company has been the controlling force in bringing about the successful carrying out of this important enterprise. The character and scope of this gigantic corporation has become so world renowned that I need say nothing of its reality, except to say in general terms that it has taken possession of all the British territory between the German territory in the north and the Portuguese territory in the east, and from the northern borders of the Transvaal to the Zambesi, an empire within an empire.

Under the leadership of a gentleman whose name is synonymous with sagacity, clear insight, and far-reaching vision, this company, guarded by its own troops, has recently carried its line of roadway to Mount Hampden, 800 miles from its former outpost, Mafeking, at which station a strong fortification has been erected, called Fort Salisbury, with other fortifications at intervals on the line of march, which closely follows the boundary line of the Matebeland territory, the home of the famous chief Lobengula.

This railway, following the road thus outlined, is being built by the company to be taken over by the Government of Cape Colony, at least that portion through Bechuanaland.

From personal letters I have received from American gentlemen who accompanied the expedition, together with the reports of correspondents of newspapers and the reports of officials, it would appear that the new territory thus opened is very rich in gold-bearing reefs, and that the land is fertile and

comparatively well wooded and watered and well adapted to both agriculture and grazing, and with a generally good climate.

My previous reports have shown the then disinclination of the people of the Transvaal to admit of the extension of the colonial system of railways through that country. By the opening of this northern railway a flank movement, as it were, was consummated, by reason of which all objections to the former course were rendered untenable. Thus this month sees the opening of the colonial system from Colesburg to Bloemfontein (144 miles), giving an all-rail route from the latter place to Port Elizabeth (450 miles) and also to Cape Town, which has been celebrated this week with every evidence of unison and mutual good feeling.

A further extension from the capital of the Orange Free State to the Vaal River has been agreed to by the colony, and the Transvaal Government has also agreed to the extension of the railway to the gold fields of Johannesburg. A brief examination of the map will show what an immense territory is now opened up north of the Transvaal, which will be occupied in the near future by those who will understand how to turn to advantage the riches nature has so lavished in this part of South Africa.

My previous report will show that, through good and evil report, my faith in the future of the gold fields of this country has never wavered; and the time will speedily arrive when, with a lessened cost of reduction of gold-bearing ore and economy of working established, the mines of this country will not only be profitable, but will astonish the world with the amounts of their outputs.

Given the incorporation of Swaziland by the Transvaal and Zululand by the colony of Natal, and other features which now cause more or less friction will speedily right themselves, and the onward march in prosperity of the various countries will be assured.

Following will be found the memorandum of the company, which will no doubt be read with interest. The only criticism I have to offer is on section 10—flotation. With the immense field of operation under the dominion of the company, it would seem that the terms offered to prospectors are not sufficiently generous. Considering the large number of mining companies that will surely be established in the territory—and prospecting has been carried far enough to put this beyond the reach of doubt—it would seem as if the tax on the claim-holder should have been established at one-half of that proposed.

Besides the territory already mentioned as the property of the company, a further treaty has been made with a native chief, by which it will come into possession of more than 20,000 square miles, provided the treaty arrangements between England and Portugal do not nullify the provisions of this treaty with the native ruler.

It having been my custom to distribute among the members of the Government railway staff the various magazines and papers coming to the consulate treating of railway matters, I am pleased to say that, conservative as

this colony is said to be in its adoption of modern ideas, the Government has ordered from the United States twenty goods (freight) cars and two locomotives. Appreciating, as I do, very highly the broad views of management held by the railway staff, I have no doubt the excellence of our cars will meet with ready appreciation.

THE BRITISH SOUTH AFRICA COMPANY.

MEMORANDUM OF THE TERMS AND CONDITIONS UPON WHICH PERSONS ARE PERMITTED TO PROSPECT FOR MINERALS AND METALS IN MASHONALAND.

Prospecting licenses.

(1) Any person may take out a license on binding himself in writing to obey the laws of the company and to assist in the defense and maintenance of law and order, if called upon to do so by the company, such license to bear a stamp of the value of 1s.

Right of prospecting holders to peg off claims.

(2) Every license-holder is free to peg off one alluvial claim and ten quartz reef claims in block. When the claims have been marked off, the same shall be registered, and the license-holder shall receive a certificate of registration, such certificate to bear a stamp of the value of half a crown.

Size of claim.

(3) Alluvial claims are in extent 150 by 150 feet. Quartz reef claims are in extent 150 feet in the direction of the reef and 400 feet broad. The claim-holder may follow the reef in all its dips, spurs, angles, and variations.

Terms on which quartz reef claims may be held.

(4) Every registered quartz reef claim is to be held by the prospector on joint account in equal shares with the company, and every transfer, hypothecation, or lien of his interest in such claims is subject to the rights of the company.

Registration of alluvial claims.

(5) Certificates of registration of an alluvial claim or portion of a claim in any alluvial digging are to be covered by a stamp of £1 for each month for which such claim or portion of claim is registered, payable in advance. The company, however, claims no rights in respect to gold won from alluvial claims.

Discoveries of alluvial diggings.

(6) The discoverer of an alluvial digging distant not less than 10 miles from any known alluvial digging shall have the right to peg off two alluvial claims in addition to his other rights.

Work to be done on claims.

(7) Every digger shall, within 4 months from the registration of the block of claims, under penalty of forfeiture of his claim license, sink upon his block of quartz reef claims either a shaft of a depth of 30 feet in the reef or a shaft of at least 30 feet outside the reef, with a crosscut through the reef.

Certificate of inspection.

(8) So soon as the claim-holder has done the required amount of work and has given evidence that he has opened up a payable reef, he shall receive an inspection certificate to the effect that the required work has been done, such certificate to bear a stamp of the value of 15s.

Payment of claim license.

(9) Prior to flotation the claim-holder shall pay no license. After flotation the license shall be at the rate of 10s. per claim per month.

Flotation.

(10) On claims ascertained to be payable, the company have the right to float them into either a joint stock company or into a syndicate. The company shall therefore, within a reasonable time, either make a proposal or decline to do so. If the proposal is accepted by the claim-holder, he shall, on flotation, be entitled to half the vendor's script in the shares of the company so floated. If the claim-holder is not satisfied with the company's proposals, he has the right within 1 year to prove to the company that he is in a position to float on better terms, and he shall, on the flotation of the claims, give the company half of the vendor's script.

Pegging out of additional claims.

- (11) Any claim-holder shall be at liberty to peg out a fresh block of ten claims—
 (a) When he shall have given notice of abandonment of his existing block of ten claims.
 (b) When he has received his inspection certificate from the mining commissioner.

Agreement.

(12) An agreement binding prospectors to abide by the laws of the company, under forfeiture of rights, is to be signed by all the prospectors either at Kimberley or Tuli.

E. RUTHBRFOORD HARRIS,

Secretary.

ITINERARY OF ROUTE.

Mafeking to—	Miles.
Ramousta (telegraph station).....	80
Palla Camp (telegraph station), junction of Notawa and Crocodile Rivers.....	200
Elebe, on the Lostani River.....	280
Macloutsie Camp and Post, Macloutsie River.....	320
Tuli Camp and Post, Tuli and Shashi Rivers.....	370
Victoria Camp and Post, 35 miles north of Lunde River.....	600
Chester Camp and Post, near Mount Wedza.....	750
Fort Salisbury, 8 miles northeast of Mount Hampden.....	800

GEORGE F. HOLLIS.

Consul.

UNITED STATES CONSULATE,

Cape Town, December 24, 1890.

ZURICH FACTORY OPERATIVES.

REPORT BY CONSUL CATLIN.

An interesting insight into the system and thoroughness with which the laws pertaining to hours of factory labor are administered here is furnished by a recently published statement in the official journal of the canton of Zurich, showing the number and nature of permits issued for working overtime during the year 1890. Seventy-nine such permits were issued in all, two of which, however, should be left out of consideration, inasmuch as they did not apply collectively to the operatives in the cotton mill to which they were

issued, but only to a limited number of carpenters employed on Sundays in laying a new floor in one of the workrooms.

Of the other seventy-seven permits, one was issued in January, ten in February, ten in March, six in April, five in May, three in June, two in July, ten in August, five in September, five in October, eleven in November, and nine in December. In one permit three separate establishments were included, and in each of three other permits two establishments belonging to the same firm. The grounds on which the permits were issued are various. Twenty-two of them are based on "heavy orders, short delivery, pressing commands, behindhand with the work, etc." In eight other cases the ground for haste is more precisely stated, viz, "military supplies, requirements of railroad traffic, printing time-tables, a bulletin to be issued, work for securing the national museum."

Thirty-two permits had to be issued in consequence of interruptions of various natures in the factory work; ten of these, for instance, were owing to "unforeseen interruption" (probably the influenza epidemic), and mostly in cotton mills, four were on account of construction of races, six for want of water, nine for repairs or additions, two for reorganization of work, and one for no precise reason stated.

In three instances the permits for extra working hours in cotton weaving and spinning mills were based on changes in the market. Unfortunately for the completeness of the report, it does not state by how much the seventy-nine permits in question augmented during the year the aggregate working time of all the operatives in the canton, both collectively and per capita. This lack does not, however, affect the main fact that factory proprietors are here held to a strict accountability in regard to the number of hours' work daily performed by each and every one of their employes.

GEORGE L. CATLIN,

Consul.

UNITED STATES CONSULATE,

Zurich, January 12, 1891.

THE FOREIGN TRADE OF ENGLAND.

REPORT BY COMMERCIAL AGENT SMYTH, OF HUDDERSFIELD.

In my report of July 28 I called the attention of the Department to the universal interest aroused in England by the pan-American agitation, and cited an expression of opinion by one of the leading journals of the country on the ultimate object in view and its relative bearing on British trade. I propose now to show, for the benefit of American manufacturers and producers, that there is good, substantial ground for the interest thus excited, for there is a volume of trade to be protected of immense proportions.

The returns for the year 1889, giving the import and export trade of the country, have only recently been published with a degree of completeness and accuracy that enables one to judge results correctly. I find, on exam-

ination of these statistics, that the various countries included in the reciprocity scheme imported from England that year a general assortment of merchandise products, etc., valued at the enormous sum of \$236,323,366. Let us see how this was apportioned.

Table showing the value of exports from England during 1889.

Countries.	Value.	Countries.	Value.
Spain and possessions (notably Cuba)...	\$47,331,913	Chile.....	\$15,450,000
Mexico.....	7,894,786	Brazil.....	33,000,000
Central America.....	5,088,667	Uruguay.....	12,000,000
United States of Colombia.....	6,000,000	Argentine Republic.....	53,000,000
Venezuela.....	4,000,000	British North America (Canada).....	46,000,000
Ecuador.....	1,353,000	Total.....	236,323,366
Peru.....	5,225,000		

British North America is included on the ground that a commercial union with these countries would be the practical application of the reciprocity idea. It must be remembered that the foregoing exhibit does not by any means represent the total imports of the countries named. It is simply a statement of their trade in approximate values, or round numbers, with Great Britain alone. Now let us see how the various articles of British produce and manufacture figure in this statement, and let American manufacturers and producers compare notes:

Articles.	Value.	Articles.	Value.
Alkali (chiefly soda).....	\$7,500,000	Hats.....	\$6,000,000
Apparel (ready-made).....	24,000,000	Implements and tools of industry.....	6,200,000
Arms, ammunition, etc.....	8,500,000	Leather:	
Bags and sacks (empty).....	3,800,000	Tanned and unwrought.....	6,450,000
Beer and ale.....	7,000,000	Boots.....	8,900,000
Biscuits and bread.....	2,800,000	Linen manufactures.....	28,000,000
Books, printed.....	6,300,000	Jute manufactures (including yarn)....	16,000,000
India rubber manufactures.....	5,500,000	Manures (including chemical manures)	10,000,000
Railway carriages, tracks, etc.....	9,750,000	Medicines, drugs, etc.....	4,500,000
Cement.....	6,000,000	Oilseed.....	7,300,000
Chemicals and dyestuffs.....	13,700,000	Painters' colors and materials.....	7,650,000
Coal.....	73,000,000	Paper and stationery.....	13,500,000
Naphtha and similar products.....	6,000,000	Pickles, vinegar, confectionery, etc.....	6,500,000
Corn, grain, and meal.....	2,000,000	Skins and furs of all sorts.....	4,800,000
Cotton yarn.....	57,000,000	Soap.....	2,500,000
Cotton manufactures:		Spirits.....	6,000,000
White or plain.....	160,000,000	Sugar (refined).....	3,000,000
Printed, etc.....	95,000,000	Steam-engines.....	19,000,000
Lace, etc.....	9,000,000	Machinery not steam-engines.....	57,000,000
Stockings, etc.....	1,900,000	Other iron and steam manufactures (including raw material).....	145,000,000
Sewing.....	13,000,000	Copper, brass, lead, tin, zinc, etc.....	25,000,000
Hosiery and small wares.....	11,600,000	Telegraph wires and apparatus.....	5,000,000
Earthen and china ware.....	11,300,000	Silk manufactures, yarn, etc.....	15,000,000
Furniture, cabinet, and upholstery.....	4,200,000	Wool (sheep and lambs').....	4,850,000
Herrings and other fish.....	8,700,000	Woolen and worsted yarn.....	21,000,000
Glass (plate, flint, bottles, etc.).....	5,700,000	Woolen manufactures.....	106,000,000
Haberdashery.....	11,000,000		
Hardware and cutlery.....	15,000,000		

The foregoing list represents the various articles exported from Great Britain and Ireland to all countries during the year 1889 and their gross value. From this list the South American countries, with Spain and Canada, have drawn largely for their supplies, the amount being represented by the total already given.

There are very few items in the exhibit which can not be supplied by American manufacturers and producers. It must be remembered that the foundation of this extensive commerce was laid at a time when our native industries were struggling for a foothold in the great contest for trade, and that they were unknown or completely ignored by our neighbors. Now that they are firmly established, it is only necessary to convince our South American friends that we are in the field for their business. A glance at the list will convince any American who is acquainted with the wonderful manufacturing and producing energies of the country that we are to-day in splendid condition to capture our full share of this valuable trade. Look at the items of ready-made clothing, cotton manufactures, chemicals, steam-engines, machinery, raw material, copper, brass, lead, zinc, haberdashery, hats, boots, manures, paper and stationery, pickles, vinegar, sugar, and so on, from the alkalies down, and then wonder how it is we have permitted such a splendid trade to gravitate from our shores so long.

It is idle to ignore the fact that the English press regards with serious apprehension the progress of a movement that threatens to interfere somewhat with the trade monopoly in South America. England can not very well afford to lose any portion of the export trade in the face of returns which show the balance of trade largely against her in 1888 and 1889. In the former year her imports were £387,635,743, while her exports amounted to £297,885,236. In 1889 her imports amounted to £427,637,595, while her exports were £314,705,741. In the year 1888 we see the balance of trade against her by £89,750,507, or a fraction over \$433,000,000. In 1889, while there was an increase of over \$200,000,000 in the volume of business, the balance of trade against her had crept up to the colossal sum of £112,931,854, or nearly \$550,000,000.

Of all the countries trading with England, the United States was to the front in 1888 with a balance of trade in her favor of £38,551,805, or about \$188,000,000. In 1889 this balance was increased to £51,582,541, or a fraction over \$254,000,000. Of all the European nations maintaining extensive trade relations with England, Germany stands out in a sort of forlorn contrast with her neighbors, having a balance of trade against her in 1888 of nearly \$6,000,000. In the following year (1889) the balance was increased by \$14,000,000, the total recorded against her being \$20,000,000.

France comes next to the United States, having increased the balance of trade in her favor from \$73,000,000 in 1888 to \$118,000,000 in 1889.

Russia exported to England in 1888 \$131,000,000 worth of her products, while she took in exchange only \$38,000,000 worth, leaving a balance in her favor of \$93,000,000. The following year the balance was nearly the same.

Holland and her possessions purchased \$70,000,000 less than she sold in the English markets in 1888 and about \$64,000,000 less in 1889. She managed to keep the balance of trade well on her side both years.

The imports from Belgium in 1888 amounted to \$78,000,000, while the English exports were \$65,000,000, leaving a balance on the Belgium side of \$13,000,000. In 1889 the imports from the same source were \$88,000,000, while the exports to Belgium were \$68,000,000, or a balance on the Belgium side again of \$20,000,000.

Political economists may evolve from these figures conclusions to suit themselves. The proposition is self-evident that a country which occupies the foremost place among the nations of the earth for its commercial supremacy is confronted with an uphill fight to maintain that supremacy when the balance of trade is piling millions on top of millions against her each year. It is for the people of the United States, conscious of the advantages of their position, their increasing power, and unequaled all-round resources, to look to the logic of facts and be prepared to make the most of future possibilities. The time is not far distant when they may find themselves masters of the commercial situation, for commercial supremacy, like national domination, is liable in the course of time to shift its base. It behooves them, therefore, to be on the lookout for this valuable trade, which is bent on slipping away from its old moorings to drift into currents that are destined to convey it to closer markets and more friendly shores.

WILLIAM P. SMYTH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Huddersfield, January, 1891.

THE OCTROI OF ROUEN.

REPORT BY CONSUL WILLIAMS.

TRAFFIC.

The last month of the year 1890, as the preceding months of that year, indicated an important increase in the traffic of the port of Rouen. In reviewing the total of entries and shipments for the year 1890, we find that 1,888 ships, carrying 1,375,451 tons of merchandise, have entered the port, and that 237,651 tons have been shipped, making a total of 1,613,102 tons.

The year 1889 gave a sum total of 1,309,399 tons transported on 1,349 ships; the year 1888, which was considered exceptional, gave a summary of 1,604,838 tons conveyed on 1,873 ships; the year 1878, 1,309,982 tons on 1,750 ships.

The imports of corn and wine, in anticipation of an advance of tariff, caused the increase in 1888. In 1890 the excess was due to coal.

THE OCTROI.

The receipts of 1890 amounted to 3,673,500 francs, against 3,680,900 francs in 1889, a diminution of 7,400 francs.

The loss was 22,300 francs upon weights and measures, accounted for by the extraordinary importation of corn in 1889 to avoid increased duty subsequently imposed; upon iron for building purposes, 20,000 francs.

The excess of receipts upon coal and wood for fuel was 10,000 francs; upon straw, 4,500 francs. Certain building materials also showed an increased consumption, such as wood, 8,300 francs; cast iron, 5,000 francs; glass and slate, 5,000 francs.

CONSUMPTION OF FOOD AND DRINK.

The inhabitants of Rouen consumed 16,717 hectolitres of alcohol at 100°, about 707 hectolitres more than in 1889. Nor did they confine their attention exclusively to this beverage, for we find that they drank 15,000 hectolitres of beer, 45,140 hectolitres of wine, and their progress in this direction deserves notice and indicates an increase of 2,450 hectolitres of beer and 1,500 hectolitres of wine; on the contrary, they drank 187,400 hectolitres less of cider, but this was due to the light crop of apples. It is impossible to assign any reason for this thirst of last year, as it exceeded that of the years of the exposition and workmens' convention, when large crowds were attracted to this city. As the best-informed inhabitants are lost in conjecture, I do not venture to mention my theory, but prefer to pass from this to a drier subject.

The consumption of meat was less than during the last year. At the cattle market 121,000 head were sold, in place of 133,000 in 1889, and, what would more clearly indicate the actual local consumption, the number slaughtered at the abattoir (slaughter-house) was 64,318, in place of 70,365 in 1889. The weight of meat of all kinds consumed was 6,779,000 kilogrammes, against 7,218,000 kilogrammes in 1889 and 7,830,000 kilogrammes in 1888, which proves clearly that their capacity for food is in an inverse proportion to their ability to absorb liquids.

The decrease in the consumption of game has been proportionally less.

Butter, eggs, and cheese have entered in the proportion of 1,957,000 kilogrammes, against 1,857,000 kilogrammes in 1889, a gain of 100,000 kilogrammes.

The receipts from the sale of fish for 1890 were 1,447,500 francs, an increase of 28,400 francs over 1889.

The sale of vegetables was larger than usual, but, in consequence of the severe and continuous frost which has prevailed, they have passed into the category of luxuries and are beyond the means of ordinary persons.

CHARLES P. WILLIAMS,

UNITED STATES CONSULATE,

Consul.

Rouen, January 21, 1891.

LINSEED IN INDIA.

REPORT BY CONSUL-GENERAL MERRILL, OF CALCUTTA.

The seed obtained from the cultivated plant *Linum usitatissimum* is known as linseed. The linseed cultivated in India up to altitudes of 6,000 feet above the sea is oil yielding.

Experiments extending through years prove that the climate of this country is not as favorable as that of Europe for the production of the best flax fiber, also that a certain apathy or dislike of change among the peasantry will prevent the cultivation of this plant for anything but the seed. Though much has been done by the Government for the production of flax and hopefulness of success has been indulged, the result has not been commensurate with the efforts put forth nor with the hopes entertained. Jute holds the place of flax in popular favor.

Linseed is grown on all the different classes of soils comprised between the lighter clay and sandy loam. It does not do as well in stiff clay as in light sandy soils, but thrives on the heavy black cotton soil of which the level plains of this country are formed, similar to the land in southern Louisiana were there in this Mississippi delta a stronger admixture of clay. The valley lands receive three or four plowings and two or three harrowings. Linseed should not be buried deep; otherwise it will not germinate properly. The seeds are, therefore, not plowed in, but simply covered by passing a drag over the field once or twice. It can be sown alone or with wheat, grain, or mustard. Sometimes all of these crops are grown together. When sown with such a crop as grain or wheat, the plan adopted is this: After wheat or grain has been sown the land is plowed; linseed is now sown broadcast, and the operation is finished by using the drag or ladder twice.

On the lighter clay land the method for growing linseed is the simplest imaginable. As soon as the rice field has become sufficiently dry, linseed is sown broadcast on the standing rice. The rice is harvested as usual, the linseed being left to be reaped about the last of March.

In some districts it is grown on land which is under water during the rains, and in this case its cultivation is of the roughest possible description, there being no preparatory plowing, but the seed being simply scattered over the ground and plowed in. Yet it is acknowledged that the land must be well drained, as stagnant water is very injurious to the crop. When linseed occupies the land alone, from 15 to 20 pounds of seed is used; but, when it divides the soil with other plants, only half as much is required.

Among the varieties of linseed there are two important kinds—the white and the red—which seem, in ordinary nomenclature, to be all-embracing. A slight preference is expressed for the former, as it is said to yield a little more oil and to yield it more easily than the latter, while the cake is softer and sweeter than that produced from the red seed. /

It is impossible to arrive at definite information in regard to the actual area devoted to the cultivation of linseed, owing to the very general habit of raising it as a mixed crop. If intended for local consumption, it is frequently grown along with mustard, both seeds being expressed at once for their mixed oils. It is often, also, grown with nonyielding oil crops in lines through the fields or in broad borders around the edges. It is estimated, however, that in all British India nearly 5,000,000 acres are now occupied by the present crop. The average outturn per acre from year to year is from 250 to 400 pounds, though in a few districts, such as Bustee and Goruckpoor, double this amount is claimed.

The arch enemy of this plant is rust, from which it always suffers in damp seasons. As linseed is sown in October and harvested in February, March, and April, it will not do at this early date to make estimates in regard to the coming product. It can be safely said, however, that more space has been given to it this year than last, that the ground was in good order, that the seed germinated well, that the weather has been favorable, that the crop is growing finely, and that everything promises a good outturn.

Pure linseed oil has not an extensive demand in India, there being practically but one linseed oil mill in all this region. The oil cake does not seem to be appreciated as a food for cattle; consequently almost the entire production is exported. The first exportation was in 1832, and amounted to 10 bushels. In the year ended March 31, 1861, it was 550,700 cwts.;* in 1881, ended as above, 5,997,172 cwts.; and during the year ended March 31, 1889, 8,461,374 cwts.

The subjoined table sets forth the imports into the chief seaports from the interior during the 3 years 1886-'89.

Exports take place chiefly in the quarter ended on the 30th of June.

The United Kingdom receives about 65 per cent. of its total supplies of linseed from India, the remainder going chiefly from Russia. In 1851 the total demand in Great Britain amounted to only 630,471 cwts., whereas in 1889 India alone furnished the United Kingdom 5,295,175 cwts.

During the year ended March 31, 1890, the exports of linseed were as follows:

Countries.	Quantity.	Countries.	Quantity.
	<i>Cwts.</i>		<i>Cwts.</i>
United Kingdom.....	4,342,962	Egypt.....	189,108
Austria.....	2,000	United States.....	772,758
Belgium.....	254,033	China.....	27,514
France.....	929,725	Australia.....	11,166
Germany.....	24,503	Other countries.....	420
Holland.....	324,943		
Italy.....	328,743	Total.....	7,146,896
Portugal.....	9,027		

Of the above, 5,124,285 cwts. were exported from Bengal, 2,013,169 cwts. from Bombay, and 9,442 cwts. from Sindh.

* 1 cwt. = 112 pounds.

During the 8 months beginning April 1 and ended November 30, 1890, the following amount of linseed was exported :

Countries.	Quantity.	Countries.	Quantity.
	<i>Cwts.</i>		<i>Cwts.</i>
United Kingdom.....	2,772,488	United States.....	618,750
Belgium.....	225,009	Other countries.....	153,085
France.....	846,391	Total.....	5,412,694
Holland.....	588,630		
Italy.....	208,341		

From April 1 to December 15, 1890, the shipment from Calcutta to the different United States ports was as follows: New York, 551,060 cwts.; San Francisco, 65,394 cwts.; Philadelphia, 74,994 cwts.

The value of linseed has more than doubled since 1840, but of late years the price has varied but little.

The following table shows the price in Calcutta for the past 5 years per maund* of 82 pounds :

Year.	January.	July.
	<i>Rs. A. P.</i>	<i>Rs. A. P.</i>
1886.....	4 8 0	4 8 6
1887.....	4 8 0	4 7 0
1888.....	4 4 0	4 3 6
1889.....	5 0 0	5 6 0
1890.....	4 14 0	.....

NOTE.—Rs. A. P. at the head of money columns signify rupees, annas, and pice; 12 pice=1 anna, 16 annas=1 rupee=40.4 cents.

In preparing the above report I have been kindly given access to the proof sheets of Dr. Watts's great work on "The Economic Products of India."

Table showing the imports of linseed by rail and river into Bombay, Karachi, and Calcutta during the 3 years 1886-'87, 1887-'88, and 1888-'89.

Provinces whence imported.	Into Bombay.			Into Karachi.		
	1886-'87.	1887-'88.	1888-'89.	1886-'87.	1887-'88.	1888-'89.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Bombay.....	35,240	25,328	27,738			
Sindh.....				44		5
Bengal.....			33			
Northwest Provinces and Oudh.....	35,769	11,372	16,264		2	53
Punjab.....	1,525	102	149	61	34	60
Central Provinces.....	39,008	24,036	27,738			
Rajputana and Central India.....	33,101	28,546	23,681			
Berar.....	25,787	22,402	28,397			
Other provinces.....	9,346	10,309	10,161			
Total.....	179,776	122,095	134,161	105	36	118

* There are two sets of weights in Calcutta, viz, the factory and the bazaar. The factory maund is equal to 74.667 pounds; the bazaar maund, the weight used by the consul-general, is 10 per cent. greater than the factory maund.

Table showing the imports of linseed by rail and river into Bombay, etc.—Continued.

Provinces whence imported.	Into Calcutta.			Total.		
	1886-'87.	1887-'88.	1888-'89.	1886-'87.	1887-'88.	1888-'89.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Bombay.....				35,240	25,328	27,738
Sindh.....				44		5
Bengal.....	220,755	228,933	199,098	220,755	228,933	199,131
Northwest Provinces and Oudh.....	60,593	59,576	74,698	96,362	70,950	91,015
Punjab.....		41	252	1,586	177	461
Central Provinces.....	213	222	138	39,221	24,258	27,876
Rajputana and Central India.....	629	2,754	587	33,730	31,300	24,268
Benar.....				25,787	22,402	28,397
Other provinces.....	1,603	2,017	2,311	10,949	12,326	12,472
Total.....	283,793	293,543	277,084	463,674	415,674	411,363

SAMUEL J. MERRILL,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Calcutta, January 7, 1890.

GULF OF ST. LAWRENCE MACKEREL.

REPORT BY CONSUL HALL, OF CHARLOTTETOWN.

There were shipped to the United States during the calendar year 1890, through this consulate, 11,627 barrels and 844 cases (48 pounds each) of mackerel. This does not include the whole amount of the exports of this article, as many small lots, in value under \$50, passed our custom-houses without a certified invoice, and, in addition, there were large shipments of cases to Sweden, Denmark, and to other portions of the Dominion.

The collectors of the different custom-houses in the consulate give as their exports 12,024 barrels and 2,709 cases. The greater part of these mackerel was of the best quality, say No. 1 and extra. They were principally caught with hook and line. Seines and vessels are not used to any great extent here. The value of the mackerel may be estimated at, say, \$200,000.

The catch in the Gulf of St. Lawrence for 1891 will, judging from the past history of this fish, be medium and small. The schools from which the fish have been drawn during the last 3 years will, it is thought, make their appearance here again. Those spawned in 1889 and 1890 will take their place and from them we must draw our principal supplies, and, as they will be small, the quality of necessity must be inferior.

J. C. HALL,
Consul.

UNITED STATES CONSULATE,
Charlottetown, January 31, 1891.

COMMERCE AND INDUSTRIES OF PIRÆUS.

REPORT BY CONSULAR AGENT McDOWALL.

COMMERCE.

Piræus, as a mercantile city, has special advantages over any other city in Greece. Its splendid harbor, which is being enlarged and deepened yearly to meet the wants of modern steamships of increased size; its position between continental Greece and the Peloponnesus; its continuous and regular communications, both by land and sea, with all the markets of production and consumption, both home and foreign; its proximity to the capital (Athens); and, also, its being the starting point of nearly all the railways yet working in the country, give it a position no other city in Greece can attain. To the above advantages must also be added that it is the industrial cradle of the nation and the greatest industrial center in the Levant.

Piræus and its industries suffered a severe blow by the hurried withdrawal of the forced paper currency in 1884, which caused many failures and left business and industries almost a wreck. But for the stable basis on which many of its industries were founded, they must inevitably have foundered in those trying times. And now, at the end of this year, it is manifest that Piræus not only has successfully overcome the blow it received in 1884, but that its commerce and industries are increasing rapidly, as from the following figures, taken from Government statistics, it will be seen that Piræus holds the first place in the country in commercial, industrial, and maritime importance:

The general import trade of Greece amounted in 1888 to \$24,877,000 and in 1889 to \$32,424,000, and the general export trade in 1888 to \$20,628,000 and in 1889 to \$23,195,000. The special import trade amounted in 1888 to \$21,830,000 and in 1889 to \$26,530,000. The special export trade amounted in 1888 to \$19,130,000 and in 1889 to \$21,555,000. Of these sums, the commerce of Piræus represents, as imports on the general trade return for 1888, \$8,366,000; Syra, \$4,365,000; and Patras, \$3,709,000. In the special trade returns the imports into Piræus were \$7,603,000; into Syra, \$3,637,000; and into Patras, \$3,418,000.

In the export trade Patras comes first of the above-named ports, having exported in 1888 values in general trade amounting to \$3,267,000; Syra second, with \$1,093,000; and Piræus third, with \$421,000.

In the general trade imports of 1889 Piræus leads with the sum of \$12,708,000, Syra follows with the sum of \$4,244,000, and Patras with the sum of \$4,125,000. In the special trade imports of 1889 Piræus has \$10,297,000; Patras, \$3,610,000; and Syra, \$3,142,000. In the general trade exports of 1889 Patras has \$4,300,000; Piræus, \$1,640,000; and Syra, \$1,133,000.

From the foregoing figures it will be seen that Patras holds the first place in export trade, but in imported values, both as regards the general and spe-

cial trade, she falls far short of Piræus and very much more than Piræus is below her in export trade.

The combined import and export trade of Greece for the year 1888 amounted to \$45,506,000, of which sum Piræus represents \$8,700,000; Patras, \$6,976,000; and Syra, \$5,459,000. The combined imports and exports of Greece in special trade for 1888 amounted to \$40,940,000, of which sum Piræus represents \$7,878,000; Patras, \$6,626,589; and Syra, \$3,683,000.

The combined import and export trade of Greece (general) for the year 1889 amounted to \$55,420,000. Of this sum, Piræus represents \$14,350,000; Patras, \$8,425,000; and Syra, \$5,355,000. The combined imports and exports of Greece in special trade for 1889 amounted to \$48,086,000. Of this sum, Piræus represents \$11,745,000; Patras, \$7,800,000; and Syra, \$3,702,000.

It is apparent from the foregoing figures that, as regards the import and export trade of the country under the general trade returns for 1888, Piræus represents about one-fifth of the total, Patras about one-sixth, and Syra about one-seventh; and from the special trade returns for the same year, taking the combined import and export trade, Piræus represents about one-fifth, Patras one-sixth, and Syra one-tenth.

From the returns of trade for 1889 it is evident that Piræus is improving on the position above shown and that fully one-fourth of the total import and export trade combined of the country is credited to her, less than one-sixth to Patras, and to Syra one-twelfth. In other words, Piræus not only leads the list, but is equal to Patras and Syra combined in the returns for 1889, which fully bears out my opening statements as to her commercial, industrial, and mercantile superiority over all other cities in Greece.

INDUSTRIES.

In 1884 the young industries of Piræus were beginning to spread out, when they had a sudden and severe setback by the withdrawal of the forced paper currency and a return to gold payments, thereby increasing cost of production, contracting credit, and almost ruining some of them. A return in 1885 to the forced currency of paper money again revived the struggling new-born industries and saved from extinction one of the chief industries of Piræus, viz, that of cotton spinning and weaving, which at that period was on the brink of destruction.

Flour mills.—Of the industries of Piræus, flour milling holds the first place as regards value of output. There are fourteen steam flour mills in Piræus, some of them on the latest roller system, employing about five hundred hands, and yearly grinding grain to the value of \$3,000,000. Nine-tenths of the product of these mills is consumed in the country and one-tenth exported to Turkey. The wages paid in this trade are: For stone dressers and millers, \$1.50; for other laborers and odd hands (not tradesmen), average, 50 cents per day. The working day is 12 hours.

Cotton mills.—Cotton spinning and weaving comes next in importance as to value of output. There are seven such factories, employing about twenty-

five hundred men, women, boys, and girls. The annual value of the produce of these mills amounts to \$1,600,000, two-thirds of which is consumed in the country and one-third exported to Turkey, Bulgaria, Servia, and Roumania. The cotton used is about half native grown and half imported (Egyptian, American, and Indian in about equal proportions). The hours of labor in all the spinning, weaving, and textile industries in Greece are the same, averaging about 10 for 3 months in winter, 12 during spring and autumn, and 13 during the summer months. The average rate of wages for men is 80 cents; women, 45 cents; and for boys and girls, 10 to 15 cents, per day all the year round.

A new worsted-weaving mill commenced operations last year. It employs about four hundred hands, and produces values amounting to \$200,000 per annum. Hours and wages are the same as in cotton mills.

Iron works.—Engineering and iron-founding come next in importance. There are five works of this kind of considerable magnitude, employing, on an average, seven hundred hands, and turning out values amounting to \$500,000 yearly. All the metals used in these works are imported from England, Belgium, France, and Germany. The hours of labor are 10 a day all the year round. The wages of foremen, who are all foreigners, are \$3 per day; leading hands (natives), \$1.50 per day; ordinary good mechanics, \$1 per day; and laborers, 50 cents per day. Many apprentices are indentured in this trade, serving a 7 years' apprenticeship, during the first 2 years of which they do not receive payment and on the third year receive 5 cents per day, and are advanced 5 cents per day yearly till the end of their apprenticeship. The greater part of the product of these works is used in the country and includes steam engines and boilers, flour and oil mills and gearing for the same, castings and general ironwork for buildings, bridges, etc., and general repairs to steamships. Two of these works have commenced shipbuilding on a small scale, having built several small steamers of 100 to 200 tons burden.

Distilleries.—There are two distilleries in Piræus making very low-class spirit, which is used chiefly to fortify weak wines. The annual product is \$200,000 in value.

Oil and soap works.—Of these there are two large and many small establishments, with a combined production valued at \$200,000 yearly.

Macaroni factories.—These are six in number. The yearly value of their production is \$160,000, nineteen-twentieths of which is consumed in the country and one-twentieth exported.

Paper manufactory.—There is only one paper manufactory in Greece. Its annual production is \$80,000, which is all used in the country.

Chair factories.—There are some fifteen of these in Piræus, but none on a large scale. They manufacture the commonest kinds of cane and rush bottomed chairs. The value of the annual production is \$70,000. Wages in this branch of trade are very low, men rarely earning over 45 cents, and women 25 cents, per day of 15 hours.

There are no factory laws in Greece, neither as regards hours of labor nor the age at which children may be employed in factories. It is, however, a much-needed law, especially in the cotton and textile factories, where children of 9 years of age of both sexes are kept at work during the heat of summer from 4:30 a. m. till 7:30 p. m., with only 1 hour's interval during all that time for meals and relaxation.

Miscellaneous.—There are two tanning establishments, whose annual production is valued at \$50,000. Of wire nail manufactories, there are three, making nails from imported wire; the annual value of the output is \$32,000. There are several sawmills, ice factories, manufactories of sweets, brick and tile works, furniture-making works, and naphtha-distilling works, having a combined annual output of \$150,000.

SHIPPING.

There entered and cleared from the harbor of Piræus during the year 1889 from and to home and foreign ports 7,000 vessels in all. Of this number, 1,129 were steamships and sailing vessels from foreign ports, the aggregate tonnage being 887,251. The movement of shipping in the port of Piræus is increasing yearly. The ships entering and leaving Piræus harbor are: Greek sailing vessels and the steamships of the three Greek companies (two coasting, and one running steamers to the Black Sea ports and intermediate ports to Trieste), the Austro-Hungarian Lloyd's, the Italian Florio-Rubattino Company, two French companies (the Messageries Maritimes and Fraissinet Company), the Egyptian Khedive line, a Dutch line, a Danish line, one German line, and an English line from Liverpool, all having regular established agencies in Piræus. At present ships requiring repairs use the Government floating dock in Salamis Bay.

Two lines of railway run out of Piræus. At present I merely mention these, as I purpose reporting at an early date on the railways of Greece.

A. C. McDOWALL,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Piræus, January 19, 1891.

Electricity for lighting purposes.—The consul-general at Melbourne, under date of December 22, 1890, requests, for the information of the corporation of Melbourne, such reports upon the transmission of electricity for lighting purposes as it may be possible to obtain, especially with reference to the economy of carrying the conductor upon poles or underground, loss by either method, and possibilities of distance, etc., as they would profit by the experience of companies or corporations in the United States. They have a water-power 13 miles distant.

BRITISH SHIPBUILDING IN 1890.

REPORT BY CONSUL JONES, OF CARDIFF.

All the berths of all the shipbuilding yards of the United Kingdom were fully occupied at the beginning of 1890. The capacity of the yards for turning out tonnage was greater than it had been at any period in the history of British shipbuilding. There was ground for believing that the tonnage launched during 1890 would, perhaps, exceed the output of any previous year, but the predictions of a year ago have not been verified; a slight decline rather than an advance has taken place.

The output of tonnage in 1889 aggregated 795 vessels measuring 1,326,240 tons, against 874 vessels measuring 1,276,127 tons in 1890, showing a falling off of 50,011 tons. But, although all the berths of all the yards were fully occupied at the beginning of last year, fresh orders were few and far between, especially during the first half of the year. Meanwhile the cost of production was daily increasing in every direction and department to an extent which absorbed a large proportion of the builders' profits, advanced the price of cargo tonnage, and discouraged judicious intending buyers. Moreover, labor troubles were threatening everywhere, strikes ensuing in some instances, while anxiety and unsteadiness pervaded the industry during the first half of 1890; but towards midsummer fresh orders again came, the berths were once more occupied, and the yards were kept well employed until towards the close of the year.

Much anxiety has been caused, and undoubted evil has supervened, through the perpetual friction between employers and employed. It is believed by many, including the present writer, that perfect and permanent organizations, recognized on both sides, are the only safeguards against strikes and lock-outs, with their disastrous effects upon trade, their crop of suffering and privation to the men and their families, and the evil consequences to the education and future career of workmen's children. Permanent boards of conciliation will bring concord and far-reaching blessings in their train; they promise more, are more pregnant with future good, than any principle or project in politics or economics that is commanding the attention of statesmen and scientists to-day.

Although 1890 was a year of anxiety and frequent disappointments to ship owners and builders, it was one of the greatest shipbuilding years in the history of the industry, showing a tonnage launched represented by 874 vessels measuring 1,276,129 tons, coming within 50,011 tons of the aggregate launched in 1889 and showing an advance on the great shipbuilding year 1883 of 26,129 tons. The years 1883 and 1889 indicate the full sweep of the pendulum. The former year showed a tonnage launched of 1,250,000; then commenced the downward swing and in 3 years, or by 1886, the total annual output had declined to less than 500,000 tons, or, to be accurate, to 480,799 tons. The gradual yearly increase set in with nearly 100,000 tons

in 1887, over 325,000 tons in 1888, and 425,553 tons in 1889, when the total output reached the unprecedented figures of 1,326,240 tons. As it was in 1883, so it will prove to have been in 1889; the tonnage launched during the latter year will mark the furthest point of prosperity that the shipbuilding industry shall enjoy for many years to come. The year just ended already indicates a falling off of 50,011 tons compared with 1889, and should the annual decline of 1891 approach 500,000 tons compared with 1890 I shall certainly not be surprised. The downward course of the industry will be hastened by the facts, first, that freights have been for the last 12 months, and continue to be, unsatisfactory and unprofitable to such an extent that a vast amount of tonnage is already laid up for want of remunerative employment; second, that the price of coal and shipbuilding material continue as high as they were at the beginning of last year; third, that wages all round are equal to the rates prevailing in January, 1890. I conclude, therefore, that shipbuilders will not, during the next few months at all events, be in a position to make tempting offers to shipowners in the way of low prices, while the shipowners, in view of the wretched freights prevailing and prospective, will scarcely feel warranted in ordering new ships without some extraordinary inducements on the score of terms.

Indeed, everything seems to indicate that the decline of output during the current year, compared even with 1890, will prove serious to shipbuilding and auxiliary industries, as well as to a large army of artisans and laborers.

The advantage to be derived from large ships in speed and economy of working continues to influence shipowners in that direction, and the average size of ships has advanced to a substantial extent at all the shipbuilding centers.

If British shipowners and the admiralty were loth to adopt iron instead of wood as a shipbuilding material, they have not been slow in recognizing the superiority of steel over iron for the hulls of ships, and during the year under notice no less than 97 per cent. of the total output of tonnage was built of steel, the remaining 3 per cent. representing iron ships and a few small wooden vessels.

The advantage of the triple-expansion over the compound engine is also generally admitted, and the triplex type is all but universally adopted. Engineers, indeed, are already complaining that shipowners are blind to their own interests in declining to adopt the quadruple engine. Mr. Wigham Richardson, president of the Northeast Coast Institute of Engineers and Shipbuilders, said in his inaugural address that "there is no manner of doubt that a great economy must follow the adoption of four cylinders, and that they will come into use as soon as they can be arranged without undue complication, with a ready accessibility of parts, and without any great increase of weight or space; and I may say, parenthetically," continued Mr. Richardson, "that my friend and partner, Mr. John Tweedy, claims to have fulfilled all these conditions."

The year 1890 was remarkable for the loss of the fine steamers, *Dacca*, *Quetta*, *Tasmania*, and *Hong Kong* and for the unique disaster to the *City of Paris*. To this list must be added the name of the ill-fated *Serpent*. The loss of life attending some of these wrecks and the immunity from personal injury in the case of the *City of Paris* disaster confirm the views formerly expressed in my annual reviews of the wisdom of building ocean passenger steamers in numerous water-tight compartments and of providing them with twin screws. Paddle-wheel passenger vessels should also be provided with twin engines, each engine working, not one, but two cranks. Such a vessel would never be placed in the difficulty in which the *Paris* found herself in January, 1890, when, through the rupture of one or two paddle arms and floats of one wheel, she became helpless between Dieppe and Newhaven and narrowly escaped destruction near Cape Gris-Nez.

This leads to a consideration of the life-saving appliance act of 1888, an act only recently put in force, but one which marks an epoch in nautical history.

For the first time in naval annals Jack is provided by law with good and well-found boats, with life belts, one for each man, and a sufficient number of buoys. For passengers the most careful and elaborate provisions have been made to save life in case of wreck, and perhaps little more can be done afloat, except to make the vessel herself wreckproof. The serious questions of manning and of securing sober crews have yet to be considered.

On December 9 last every British ship, except small coasting vessels and pleasure yachts, came under the operation of the law relating to free board. Every vessel must be measured and marked in accordance with the rules to be found in the load line committee's tables, given in the "Shipping World Year Book;" and in carrying out this work the surveyors belonging to the board of trade and to Lloyd's have had opportunities of discovering structural and other defects in steamers and sailing ships and have caused the defects to be remedied. This must tend to give increased security to life and property afloat, and is a valuable incident in the operation of the load line act.

There are prophets who declare that before long steam-boilers and steam-engines will pass away; that their place will be taken by smaller and more powerful motors of a more subtle character. This may come to pass; but, in my opinion, many years will elapse before any other motor than the steam-engine will propel a vessel of 10,000 tons burden across the Atlantic at the speed of 20 knots an hour.

In the engine and boiler rooms minor improvements are steadily being carried out. Evaporators, to supply fresh water to the boilers, are being fitted to nearly all ships having triple-expansion engines, and great attention is being paid by superintending engineers and by the admiralty engineers to the question of water-gauge fittings. So many fatal accidents have recently occurred in boiler rooms through false water levels and breaking of gauge glasses that everywhere inquiries are being made as to the best means of

preventing similar fatalities in future. If I am not very much mistaken, the current year will witness the almost universal adoption of a means to reduce the rolling of vessels at sea, and the inventor will deserve well of humanity who shall bring into use a reliable and efficient method to reduce a vessel's rolling without lessening her initial stability.

The Clyde maintains the lead with the largest output of tonnage of any single river in the Kingdom. It has an aggregate for 1890 of 349,936 tons, showing, moreover, an increase over the preceding year of 15,482 tons. But when the Clyde is taken as a district and compared with the northeast coast, the latter district takes the first position by nearly two to one, the exact figures being: Northeast coast, 341 vessels measuring 676,183 tons; the Clyde, 302 vessels measuring 349,936 tons, or a difference in favor of the northeast coast of 326,247 tons. The Clyde continues to be the premier shipbuilding river of the world, not only in the quantity of tonnage launched, but also in the character and variety of ships built. But the Scottish river must look well to its laurels, for the rivers of the northeast coast and Belfast Loch are making marvelous strides as producers of merchant shipping of the very highest class. Messrs. Harland & Wolff are unsurpassed in this regard. Sir William Armstrong and partners, Messrs. Hawthorn, Leslie & Co., Sir Charles Palmer and partners, Messrs. Wigham Richardson & Co., Messrs. Swan & Hunter, on the Tyne; Messrs. Robert Thompson & Sons, of Sunderland; Messrs. Edward Withy & Co., Hartlepool, as well as several enterprising and accomplished firms on the Tyne, Wear, and Tees, are determined to take advantage of their superior position and, if possible, wrest from the Clyde its banner.

The Clyde has reason to be proud of its achievements last year, not only in having advanced on the output of 1889, but also upon once more winning the blue ribbon for one of its firms. Last year the great Jarrow firm of Sir Charles Palmer and partners showed the largest output of tonnage by any single firm, with a total of 64,669 tons. The year previous Messrs. William Gray & Co., of Hartlepool, took the highest position among the world's shipbuilders; Messrs. Harland & Wolff, of Belfast, had enjoyed the distinction the year before, and the Clyde before that; and now the coveted distinction has returned once more to the Clyde, as will be seen by the following table:

Name of firm.	Location.	Output.
		<i>Tons.</i>
Russell & Co.....	Glasgow.....	70,370
W. Gray & Co. (limited).....	West Hartlepool.....	64,253
Harland & Wolff.....	Belfast.....	48,625
Palmer's Shipbuilding and Iron Company.....	Jarrow.....	45,312

The following tables, showing the number and tonnage of vessels built in the various districts of iron or steel for home or foreign account, will be found self-explanatory, and I believe that they will be found accurate.

Table showing the number of vessels built in the United Kingdom in 1890, with the tonnage for 1889 and 1890.

Name of firm.	Vessels built in 1890.		Tonnage.	
	Steam.	Sail.	1890.	1889.
The Tyne:	Number.	Number.	Tons.	Tons.
Palmer's Shipbuilding Co.....	14	.....	45,312	64,669
Sir William Armstrong, Mitchell & Co.....	13	.....	28,110	34,415
C. S. Swan & Hunter.....	11	.....	26,454	28,312
John Readhead & Sons.....	11	.....	23,599	26,182
R. & W. Hawthorn, Leslie & Co.....	9	.....	19,688	22,536
Tyne Iron Shipbuilding Co. (limited).....	8	.....	18,016	15,547
Robert Stephenson & Co.....	5	.....	15,795	20,517
Wigham, Richardson & Co.....	14	.....	14,578	20,353
Edwards's Shipbuilding Co.....	6	.....	10,450	6,000
W. Dobson & Co.....	6	1	10,438	12,501
Wood, Skinner & Co.....	10	.....	10,065	8,892
Schlesinger, Davis & Co.....	3	.....	7,867	13,029
Thomas & William Smith.....	3	.....	2,356	7,101
Hepple & Co.....	6	.....	790	536
J. P. Rennoldson & Sons.....	5	.....	722	.....
J. T. Eltringham & Co.....	5	.....	658	945
Dunston Shipbuilding Co.....	1	.....	100	.....
Thomas Brown.....	1	.....	64	.....
The Tyne General Ferry Co.....	.....	.....	.....	169
Northern Marine Engineering Co.....	.....	.....	.....	4
Total.....	131	1	235,062	281,708
The Wear:				
J. L. Thompson & Sons.....	13	.....	52,040	30,545
William Doxford & Sons.....	9	.....	28,386	24,150
Short Brothers.....	11	.....	25,073	23,419
James Laing.....	9	.....	22,701	29,160
Sunderland Shipbuilding Co.....	6	.....	15,715	23,563
John Blumer & Co.....	8	.....	14,270	15,296
W. Pickersgill & Sons.....	2	3	12,225	7,950
R. Thompson & Sons.....	7	.....	11,377	18,170
Priestman & Co.....	6	.....	10,473	8,037
Bartram, Haswell & Co.....	4	.....	10,013	11,917
Osbourne, Graham & Co.....	4	.....	6,098	10,692
S. P. Austin & Sons.....	3	.....	5,978	6,951
Strand Slipway Co.....	3	.....	3,129	7,482
Total.....	85	3	197,476	217,332
The Tees:				
Raylton, Dixon & Co.....	20	.....	43,665	40,689
Ropner & Sons.....	12	.....	32,662	29,441
Richardson, Duck & Co.....	8	.....	24,861	21,585
Craig, Taylor & Son.....	2	.....	15,398	10,450
R. Craggs & Sons.....	2	.....	5,553	5,561
W. Harkess & Son.....	9	.....	5,600	2,700
Total.....	66	.....	127,739	110,426
West Hartlepool:				
W. Gray & Co. (limited).....	27	.....	64,253	58,731
E. Withy & Co.....	11	.....	26,024	21,015
Irvine & Co.....	5	.....	9,570	6,129
Total.....	43	.....	99,847	85,875
Whitby:				
Turnbull & Son.....	4	.....	8,682	13,146

Table showing the number of vessels built in the United Kingdom in 1890, etc.—Continued.

Name of firm.	Vessels built in 1890.		Tonnage.	
	Steam.	Sail.	1890.	1889.
	Number.	Number.	Tons.	Tons.
Blyth :				
Blyth Shipbuilding Co. (limited).....	6		7,259	10,889
Union Coöperative Shipbuilding Co. (limited).....	1	1	118	85
Total.....	7	1	3,595	10,972
The Clyde :				
Russell & Co.....	8	26	70,370	46,500
Fairfield Shipbuilding Co.....	8		33,795	23,830
D. & W. Henderson & Co.....	4	11	21,196	11,806
Barclay, Curle & Co.....	6	1	19,496	12,760
Charles Connell & Co.....	4	3	18,012	15,020
A. Stephens & Sons.....	6	1	16,841	18,430
Caird & Co.....	5		16,318	16,461
William Denny Brothers.....	7		16,228	25,230
Scott & Co.....	7	4	15,882	20,630
J. & G. Thomson.....	7		14,800	12,316
A. & J. Inglis.....	7		11,554	8,304
Robert Duncan & Co. (limited).....	2	5	10,742	11,257
Mackie & Thomson.....	11		7,802	2,215
Ailsa Shipbuilding Co.....	7		6,044	3,771
W. Hamilton & Co.....	3		5,851	5,312
R. Napier & Sons.....	1		5,659	11,640
Napier, Shanks & Bell.....	4		5,616	5,166
McMillan & Co.....	2	2	5,280	10,344
Fleming & Ferguson.....	10		5,150	3,620
Murdock & Murray.....	7		4,624	5,269
Simons & Co.....	10		4,310	3,375
Blackwood & Gordon.....	6		4,289	800
London & Glasgow Engineering Co.....	2		3,600	8,660
Lobnitz & Co.....	16		3,553	6,507
Allen & Maclellan.....	26		3,385	1,517
Campbeltown Shipbuilding Co.....	2		2,951	4,484
McKnight & Co.....	5		2,510	4,558
D. J. Dunlop & Co.....	5		2,305	5,700
Scott & Co. (Bowling).....	5		1,970	2,054
J. Fullerton & Co.....	6		1,774	965
T. B. Leath & Co.....	11		1,646	527
J. Reid & Co.....	3		1,128	12,754
Murray Brothers.....	7		1,104	
McArthur & Co.....	5		906	752
Darry & McKendrick.....	5		794	
Abercorn Co.....	1		742	86
White & Co.....			550	
McGill & Co.....	3		419	326
Fife & Sons.....		13	172	91
D. M. Cumming.....	2		145	34
R. McAllister.....			120	
T. Orr.....			93	
Other yacht and boat builders.....			300	
Aitken & Mansel.....				8,140
Birrell, Stenhouse & Co.....				2,160
Méchan & Sons.....				675
Marshall & Co.....				140
Wm. Swan & Co.....				140
J. & J. Hay.....				90
Androssan Shipbuilding Co.....				38
Total.....	236	66	349,936	334,454

Table showing the number of vessels built in the United Kingdom in 1890, etc.—Continued.

Name of firm.	Vessels built in 1890.		Tonnage.	
	Steam.	Sail.	1890.	1889.
Belfast:	<i>Number.</i>	<i>Number.</i>	<i>Tons.</i>	<i>Tons.</i>
Harland & Wolff (limited).....	12	1	48,626	56,430
Workman, Clarke & Co.....	10		15,631	17,710
McIllwaine & Macoll (limited).....	5	1	2,105	5,713
Total.....	27	2	66,362	79,853
The Forth:				
Grangemouth Dockyard Co.....	14	6	17,155	14,047
Ramage & Ferguson.....	5	1	8,584	13,036
S. & H. Morton.....	4		3,641	4,090
John Scott & Co.....	5		2,720	1,006
Messrs. Hawthorn.....	4		800	680
J. McKenzie & Co.....				82
Total.....	32	7	32,900	32,941
The Mersey:				
Thomas Royden & Sons.....	3	1	11,047	9,234
Laird Brothers.....	7		9,166	13,478
W. H. Potter & Sons.....	1	2	6,340	7,698
R. & J. Evans & Co.....		1	1,146	3,406
John Jones & Co.....				949
Total.....	11	4	27,699	34,765
Barrow-in-Furness:				
Naval Construction and Armament Co. (limited).....	8		24,665	26,847
Dundee:				
Gourlay & Co.....	5		11,616	
Thompson & Co.....	8		8,463	8,470
Stephens & Sons.....		2	4,415	1,508
Total.....	13	2	24,494	9,978
Londonderry:				
Charles J. Biggar.....	1	4	10,593	7,268
The Humber:				
Earle's Shipbuilding and Engineering Company.....	9		4,429	18,455
Cook, Welton & Gemmell.....	17		2,577	1,723
Cochrane, Cooper & Schofield.....	14		2,211	1,350
Smith & Stephenson.....		3	231	184
T. Charlton.....	1		175	
Total.....	41	3	9,623	21,712
Aberdeen:				
Hall, Russell & Co.....	8		5,684	5,770
Alexander Hall & Co.....	4		1,595	3,320
John Duthie & Sons.....	3		1,949	380
Total.....	15		9,228	9,470
Milford Haven:				
T. R. Oswald & Co.....	3	1	5,868	1,402
Hayle:				
Harvey & Co.....	3		5,833	
Workington:				
R. Williams & Son.....	1	1	2,884	4,703
Southampton:				
Southampton Naval Works.....	2	1	2,250	
Cardiff:				
Bute Shipbuilding and Engineering Company.....	1		1,635	2,750

Table showing the number of vessels built in the United Kingdom in 1890, etc.—Continued.

Name of firm.	Vessels built in 1890.		Tonnage.	
	Steam.	Sail.	1890.	1889.
Chepstow:	<i>Number.</i>	<i>Number.</i>	<i>Tons.</i>	<i>Tons.</i>
C. Finch & Co.....	7		1,340	
Brizam:				
Dewdney & Sons.....	7		282	
T. W. & A. Uphams.....	6		274	
R. Jackson.....	5		202	
Total.....	18		758	
Carrickfergus:				
Paul Rogers & Co.....	1	3	414	
Rye:				
G. & T. Smith.....	2		280	302
Plymouth:				
Willough Brothers (limited).....	4		168	
Devon:				
Date.....	1		113	
Yarmouth:				
H. Fellows & Sons.....		1	92	154
West Cowes:				
White & Sons.....	2	2	84	
Goole:				
Callingham Brothers.....		1	77	
Gloucester:				
W. H. Halford.....		4	60	
Gosport:				
Camper & Nicholson.....		1	55	
Falmouth:				
W. H. Lean.....	1		15	

Table showing the number and tonnage of vessels built of iron in 1890.

Name of firm.	Number.	Tonnage.
The Tees:		
Craig, Taylor & Co.....	4	7,801
Richardson, Duck & Co.....	5	4,196
W. Harkess & Son.....	2	280
Raylton, Dixon & Co.....	1	136
Total.....	12	12,413
The Clyde:		
Lobnitz & Co.....	11	2,300
Scott & Co. (Bowling).....	5	1,970
J. Fullerton & Co.....	5	1,692
Mackie & Thomson.....	6	894
S. McKnight & Co.....	1	197
Total.....	28	7,053
The Humber:		
Cook, Welton & Gemmell.....	17	2,577
Cochrane, Cooper & Schofield.....	14	2,211
Earle's Shipbuilding and Engineering Co.....	7	1,812
Total.....	38	6,600
The Mersey:		
W. H. Potter & Sons.....	2	3,438

Table showing the number and tonnage of vessels built of iron in 1890—Continued.

Name of firm.	Number.	Tonnage.
The Tyne:		
T. & W. Smith.....	2	1,084
Hepple & Co.....	6	790
J. P. Rennoldson & Sons.....	4	597
Jos. T. Elrington.....	3	322
John Readhead & Sons.....	1	289
Total.....	16	3,082
The Wear:		
W. Pickersgill & Co.....	1	1,422
R. Thompson & Co.....	1	699
Total.....	2	2,121
Dundee:		
W. B. Thompson & Co.....	2	520
Belfast:		
Workman, Clarke & Co.....	1	306
Blyth:		
Blyth Shipbuilding Co.....	1	220
Chepstow:		
E. Finch & Co.....	2	140
Aberdeen:		
A. Hall & Co.....	1	223
Falmouth:		
W. H. Lean.....	1	15

SUMMARY.

The Tees.....	12	12,413
The Clyde.....	28	7,053
The Humber.....	38	6,600
The Mersey.....	22	3,438
The Tyne.....	16	3,082
The Wear.....	2	2,121
Dundee.....	2	520
Belfast.....	1	306
Blyth.....	1	220
Chepstow.....	2	140
Aberdeen.....	1	123
Falmouth.....	1	15
Total.....	106	36,031

Number and tonnage of vessels built for foreign and colonial account in 1890.

Name of firm.	Number.	Tonnage.
The Tyne:		
Palmer's Shipbuilding Co.....	1	2,591
Armstrong, Mitchel & Co.....	7	18,616
C. S. Swan & Hunter.....	9	22,496
John Readhead & Sons.....	1	2,340
Wigham, Richardson & Co.....	9	14,578
W. Dobson & Co.....	2	2,601
Wood, Skinner & Co.....	9	9,439
A. & W. Hawthorn, Leslie & Co.....	3	4,598
Edwards's Shipbuilding Co.....	1	3,500
R. Stephenson & Co.....	1	3,372
Tyne Iron Shipbuilding Co. (limited).....	1	2,575

Number and tonnage of vessels built for foreign and colonial account in 1890—Continued.

Name of firm.	Number.	Tonnage.
The Tyne—Continued.		
Schlesinger, Davis & Co.....	1	859
J. P. Rennoldson & Sons.....	4	471
James T. Eltringham & Co.....	1	228
Total.....	50	88,284
Total for 1889.....		68,514
Increase.....		19,770
The Wear:		
Sunderland Shipbuilding Co.....	4	10,821
W. Doxford & Sons.....	3	5,489
J. L. Thompson & Sons.....	3	4,470
Osbourne, Graham & Co.....	2	4,354
W. Pickersgill & Sons.....	1	3,819
John Priestman & Co.....	2	3,806
S. P. Austin & Son.....	2	3,757
R. Thompson & Sons.....	1	3,177
Bartram, Haswell & Co.....	1	2,370
The Strand Slipway Co.....	1	1,311
Bridge Dockyard Co.....	1	115
Total.....	21	43,484
Total for 1889.....		55,732
Decrease.....		12,248
The Tees:		
Raylton, Dixon & Co.....	1	844
Richardson, Duck & Co.....	1	1,676
R. Craggs & Sons.....	2	1,410
Craig, Taylor & Co.....	1	684
Total.....	5	4,614
Total for 1889.....		7,787
Decrease.....		3,173
West Hartlepool:		
W. Gray & Co.....	3	6,620
Total for 1889.....		11,647
Decrease.....		5,027
Blyth:		
Blyth Shipbuilding Co.....	3	2,799
Total for 1889.....		2,366
Increase.....		433
The Clyde:		
Caird & Co.....	2	7,008
J. & G. Thompson.....	2	4,500
Archibald McMillan.....	1	290
Napier, Shanks & Co.....	3	4,273
Campbeltown Shipbuilding Co.....	2	2,951
D. J. Dunlop & Co.....	4	2,250
J. Fullerton & Co.....	1	191
McArthur & Co.....	5	906
D. M. Cumming.....	2	145
Other firms.....		100,954
Total.....	22	123,468
Total for 1889.....		115,272
Increase.....		8,196

Number and tonnage of vessels built for foreign and colonial account in 1890—Continued.

Name of firm.	Number.	Tonnage.
The Mersey :		
Laird Brothers.....	5	4,092
W. H. Porter & Sons.....	1	2,452
Total.....	6	6,544
The Forth :		
Grangemouth Dockyard Co.....	13	12,481
Hawthorn & Co.....	1	240
Total.....	14	12,721
Total for 1889.....		6,227
Increase.....		6,494
Southampton :		
Naval Works.....	1	2,250
Aberdeen :		
A. Hall & Co.....	2	1,352
Milford Haven :		
T. R. Oswald & Co.....	1	1,282

SUMMARY.

The Clyde.....		123,468
The Tyne.....	50	88,284
The Wear.....	21	43,484
The Forth.....	14	12,721
West Hartlepool.....	3	6,620
The Mersey.....	6	6,544
Blyth.....	3	2,799
Southampton.....	1	2,250
Aberdeen.....	2	1,352
Total.....	100	287,522
Total for 1889.....		279,969
Increase.....		7,553

General abstract of vessels built in 1890.

District.	Number.	Tonnage.
The Clyde.....	302	349,936
The Tyne.....	132	235,002
The Wear.....	88	197,476
The Tees.....	66	127,739
West Hartlepool.....	43	99,847
Belfast.....	29	66,362
The Forth.....	39	32,900
The Mersey.....	15	27,699
Barrow-in-Furness.....	8	24,665
Dundee.....	15	24,494
Londonderry.....	5	10,593
The Humber.....	44	9,623
Aberdeen.....	15	9,228
Whitby.....	4	8,682
Blyth.....	8	7,377
Milford Haven.....	4	5,868
Hayle.....	3	5,833

General abstract of vessels built in 1890—Continued.

District.	Number.	Tonnage.
Workington	2	2,884
Southampton	3	2,250
Cardiff	1	1,635
Chepstow	7	1,340
Brixham	18	758
Carrickfergus	4	414
Rye	2	280
Plymouth	4	168
Devon	1	113
Yarmouth	1	98
West Cowes	4	84
Goole	1	77
Gloucester	4	60
Gosport	1	55
Falmouth	1	15
Government dockyards		22,520
Total	874	1,276,129
Decrease, compared with 1889		50,121

EVAN R. JONES,
Consul.

UNITED STATES CONSULATE,
Cardiff, January 15, 1891.

FLAX CULTURE IN RUSSIA.

REPORT BY CONSUL HEENAN, OF ODESSA.

Flax is cultivated in all parts of European Russia for local consumption, but it has an importance for manufacture only in twenty-three governments, which sow more than 3,105,000 acres in flax, the remaining twenty-seven governments sowing less than 675,000 acres. With regard to the object for which flax is sown, European Russia can be divided into two regions—the northern and the southern. In the first flax is sown chiefly to obtain the fiber, although with the fiber seed is also obtained, and in the second nearly exclusively for the seed. The northern region of the cultivation of flax for manufacturing purposes extends from the southeastern part of the Baltic Sea to the central part of the Ural Mountains, within which are the governments of Livonia, Kovno, Vilna, Vitebsk, Pskov, Smolensk, Tver, Yaroslav, Vladimir, Nizhnee-Novgorod, Kostroma, Vologda, Viatka, and Perm. More flax is cultivated in the governments of Viatka and Pskov than in the others. In the first about 251,000 acres are sown into flax and in the second about 221,000 acres. These two provinces may be considered as the centers of the cultivation of flax, around which the other flax-producing provinces are grouped. The yield of flax per acre in these provinces is very different and depends on the quality of the soil in which the flax is sown. An acre of good land gives 400 pounds or more of fiber and from 400 to 535 pounds of

seed, but an acre of poor, exhausted soil will not yield more than 160 to 200 pounds of fiber and about 265 pounds of seed. The average yield for the entire region may be considered to be from 265 to 330 pounds of flax fiber and 400 pounds of flaxseed per acre.

The southern region of the cultivation of flax for the sake of the seed consists of the following territory and governments: The Don-Cossack territory, sowing 262,000 acres; Yekaterinoslav government, sowing 251,000 acres; Kherson government, sowing 175,000 acres; Taurida (Crimea), Samara, Saratov, Voronezh, Tambov, and Poltava. In the last two provinces flax is grown both for the seed and fiber. Flax for the seed is mostly sown either in virgin soil or in old fallow lands. The yield of seed in this region varies from 400 to 670 pounds and more per acre, and for an average may be estimated to be about 535 pounds per acre. The total harvest of flaxseed for all of European Russia attains to about 1,800,000,000 pounds. Considering the average value of the flax fiber to be \$186 per ton and that of the seed to be \$44.10 per ton, it will be seen that value or gain to Russia from the cultivation of flax is about \$112,000,000 annually.

The advantages derived from the cultivation of flax would be far more if the qualities of the Russian fiber would correspond with its quantities and if a larger portion of it were to be exported in a manufactured state. As regards its quality, Russian flax is not only surpassed by Irish flax, but also by the flax of many other countries of western Europe (Belgian, Dutch, French, and Bohemian), and is valued in foreign markets lower than any other flax. The low qualities of the Russian fiber are not the result of natural causes, but of the ignorance as to the proper method of treating the flax. The cultivators of flax are chiefly peasants, who partly do not know and partly do not possess the means to acquire the latest improvements in the primary technical manipulation of the fiber. Another cause of the imperfect working out of the flax is to be found in the absence of a home demand for a high quality of fiber. Russian factories do not produce linen from the finest numbers of spun (thread), and therefore do not require the highest class of flax. This latter circumstance is unfortunate, as it is a strong impediment to improvements in the manipulation of the flax fiber.

The aim of the producer is a large quantity rather than an improved quality, and the result is a progressive reduction in the qualities of the fiber. Of late years this has become particularly apparent in the government of Pskov. Formerly Pskov flax had a high reputation all over Russia, but now it is quoted much lower than flax from Velogda, Kostroma, Yaroslav, and Tver. About one-half of the flax fiber produced in Russia is exported abroad only half worked (the unbrushed fiber together with the tow), and the greater part of the fiber remaining in the Empire is worked up by the peasants in their farmhouses into thread and linen for their own use, as well as for sale. A much smaller part of the flax goes to the spinning and weaving factories, which are chiefly situated in the governments of Vladimeer, Kostroma, and Yaroslav.

As regards the internal or home trade of flax, it is almost entirely in the hands of small dealers, who drive from village to village and make their purchases in small lots. The flax thus collected is then sent in considerable quantities to the towns which serve as centers to the flax trade. In the western part of the northern region the most important centers of the flax trade are Poneviezh (government of Kovno), Düna burg (government of Vitebsk), Pskov, Ostrov, Opochka, and the hamlet of Soltsy (government of Pskov). From Poneviezh and Düna burg the flax is chiefly forwarded to Riga, and only a small quantity of it to Libau, and from Soltsy by rafts on the spring high water to St. Petersburg. The port of St. Petersburg receives the flax, tow, and linseed from Tver, Yaroslav, Kostroma, Vladimeer, and even from Vologda and Viatka. In the government of Tver the chief markets for the products of flax cultivation are Byetsk, Rzhev, and Kashin; in the government of Yaroslav, Ooglitch, Rostoff, and the village of Velikoje; in the government of Kostroma, Kostroma, Nerekhta, Kineshma, and Ples; in the government of Vladimeer, Melenki. From the three last-named governments only a small part of the flax is sent to St. Petersburg, the greater part being used up by the flax-spinning and linen-weaving factories. From the governments of Vologda and Viatka the bulk of the flax is forwarded to Archangel. The points where flax produce is collected for shipment by way of Archangel are: In the government of Vologda, Oostioog Velikee; in the government of Viatka, Viatka, Orlof, Slobodskoi, Kotelnik, Glazov, and Kukarka.

In the southern region the chief product of the cultivation of flax (linseed) goes direct by rail to the ports of Odessa, Rostoff, and Taganrog for exportation abroad. As regards the southeastern provinces of Samara, Saratov, and part of Tambov, they send their linseed by the water ways of the Volga and her system of canals to St. Petersburg.

The *Linum usitatissimum vulgare* and *crepitans* are being cultivated in Russia in several varieties of both kinds, but the difference in these varieties is so slight and they so easily blend that even those initiated in the trade of the article often fail to perceive it. Both (*vulgare* and *crepitans*) have blue blossoms and occasionally white blossoms. The blue-blossom varieties are preferred. About 21,000,000 bushels of seed are annually raised in European Russia. The quantity exported was as follows:

	Bushels.
1887.....	13,000,000
1888.....	14,000,000
1889.....	13,500,000
1890 (estimated).....	12,000,000

Of the total export of Russian oilseeds England receives (via Hull and London) 57 per cent.; Germany, about 14 per cent.; Holland, about 11 per cent.; and Belgium, about 8 per cent. The most important markets for the sale of Russian flax fiber are Dundee, in Scotland; Lille, in France; Ghent and Antwerp, in Belgium.

Flaxseed, as understood in Russia, comprises sowing seed and crushing seed. The first named is a more carefully sorted quality, exported exclu-

sively for sowing purposes. Crushing seed is the surplus seed of the flax-plant, which is exported for making oil, etc., as there is no demand for it as sowing seed. With this quality the seed received from the interior is mixed and the whole exported as crushing seed. Of the total quantity exported, viz, 13,000,000 bushels, about two-thirds is described as sowing seed.

The seed is sown in April, May, and early in June. It is sown earlier in the south and southeast than in the center, west, and north; much depends whether the seasons are early or late. The harvest begins as early as July and as late as the months of August and September, earlier in the south and later in the north. The number of bushels of flaxseed raised per acre depends on the object to be attained; when the seed is the object a much less quantity is sown per acre, and when the fiber is desired a much larger quantity is sown. In the south and east of Russia a little over a half bushel per acre is sown, and the yield is about 10 bushels. In those parts of central Russia where the fiber is not utilized a little over four-fifths of a bushel is sown, and the yield is about 10 bushels. In western Russia and those parts of central Russia where the fiber is utilized 1 to 1½ bushels per acre are sown, and about 5 bushels is the yield. In northern Russia, where the fiber is the chief consideration, nearly 3 bushels per acre are sown, which gives about 6 bushels of seed and from 300 pounds to 600 pounds of fiber. This year's crop is above the average in quality, but less in quantity than any year since 1885. The seed is ready for export in the months of September, October, and November in the south, and from northern and central Russia often not before March of the following year.

Flaxseed is exported from Riga, Libau, Pernaú, St. Petersburg, Rostoff-on-Don, Odessa, Nicolaiev, Sevastopol, Mariopol, Taganrog, Berdiansk, and other ports by water, and also in large quantities by rail to Germany and Austria. Flaxseed is usually sown by hand, and the land should be carefully prepared and be of good quality. The plowing should not be less than 9 inches in depth, and the land should be as free as possible from weeds and thoroughly prepared beforehand for the reception of the seed; after the sowing, the seed is covered by passing a harrow once or twice over the ground. Moist and mild weather favors the development of the plant in all of its parts; a hot and dry climate, with occasional showers, will produce a good development of the seed, but the fiber is usually coarse and brittle, as the lignin parts of the stems then develop at the expense of the fiber. The cultivation of flax, whether for seed or fiber, requires for its proper development a rich black loam (10 to 14 inches) having a clay subsoil; good crops, however, are grown where the subsoil is gravel or gray sand. Flax is grown in nearly every province of European Russia.

The working up of the flax fiber is carried out by the so-called flax-breaking or flax-swinging, and further by flax-spinning and linen-weaving, factories. The total number of flax-swinging factories is 59; of flax-spinning factories, 20; of linen-weaving factories, 88. These factories produce annually goods valued at \$20,000,000 and over, which are made entirely from

the flax fiber. Much linen and thread is made yearly by the peasantry at their homes, the value of which can not be obtained. About \$5,000,000 of linseed oil is manufactured and consumed annually in Russia, a very small quantity being exported. Oil cake, the product of flaxseed, is exported to the value of about \$2,500,000 yearly. The lesson to American farmers, especially those of the Northwest, which the total product of the cultivation of flax in Russia furnishes will be readily appreciated and understood. The possibilities which the cultivation of the flax fiber offers to Western farmers is only equaled by the surprise that such possibilities have thus far been neglected, if, indeed, they were not altogether unknown. The seed has been cultivated with more or less satisfactory results in the United States, but the fiber practically not at all. The climate, soil, and conditions generally throughout the Northwest are very favorable to the cultivation of the flax fiber as well as the seed. After a short experience, as to the primary manipulation or handling of the flax fiber, our farmers would produce flax which would compare favorably with the best varieties of the fiber. It seems strange that a practical people like ourselves should for years have been satisfied to cultivate flax for the seed at a value of about \$15 per acre, and at the same time we allow 600 pounds of flax fiber per acre to rot on the ground, this flax fiber having a value, after being manipulated, of \$186 per ton. Familiar as our farmers are with the working of improved and expensive agricultural machinery and the latest developments of the human intellect as applied to the soil, they may always learn something by watching the working of rude ideas as seen in a primitive and unsophisticated people. The main difference between the old and the new system of farming is not one of method, but of expense; and, as physicians never really know what a disease is capable of until they see an outbreak in virgin soil, so it is not possible to fathom all the possibilities of the most commonplace notions and devices until we see them applied with the unconventional freedom and simple directness that belong to comparatively primitive peoples. The Russian peasant is both simple-minded and ignorant; he clings to old methods as much from liking as for the expense which new methods involve. From the flax fiber, by the aid of his primitive and rude contrivance, the Russian peasant produces linen, thread, crash, and other valuable and necessary articles for the use of his family and for sale. It does not require the aid of expensive machinery to make the flax fiber either useful or valuable. The rude machines which the Russian peasant employs are the handiwork of some village carpenter or wheelwright, and are made at a comparatively small cost. If the Russian peasant farmer accomplishes such results, the American farmers, who possess like conditions of climate and soil, should accomplish much more. The unsatisfactory condition of the farmers in our Northwestern States, which is certainly due to the overcultivation of wheat, with its yearly decreasing yield per acre, renders it all the more important that a speedy means be found to relieve a condition of things which affects the material interest and welfare of the great majority of the people of the United

States. Such a means exists in the flax-plant. It will not only enable farmers to make their own linen, rope, thread, crash toweling, oil cake, and much besides, but will cause new industries to be established throughout the country in districts where the advent would be both profitable and new. There should be a general and persistent effort made to encourage the cultivation of the flax fiber throughout the United States, with the view of establishing factories for the manufacture of twine or textiles, and, if this report should develop a proper interest in so important a subject, the result can not fail to be satisfactory.

FLAX PRODUCT OF EUROPE.

In no country of the world does the cultivation of flax attain such large dimensions as in Russia. Russia alone produces more flax than all the other countries of Europe combined. Exact statistical data regarding the annually obtained products from the cultivation of flax are not compiled either in western Europe or in Russia. There are only approximate valuations, based upon the knowledge of the area which is occupied under the cultivation of flax and of the average yield per acre. Out of the total area sown in Europe with flax, and amounting to about 5,700,000 acres, more than 3,700,000 acres are sown in Russia. Notice must at the same time be taken of the fact that, while in all European countries without exception the area of land under the cultivation of flax is being annually more and more reduced, it is in Russia, on the contrary, being increased. The total quantity of flax fiber produced in the whole of Europe is estimated to be 1,354,000,000 pounds, distributed as follows:

Countries.	Quantity.	Countries.	Quantity.
	<i>Pounds.</i>		<i>Pounds.</i>
Russia.....	900,000,000	Ireland.....	46,800,000
Austria-Hungary.....	104,400,000	Belgium.....	43,800,000
Germany.....	97,200,000	Italy.....	43,800,000
France.....	79,200,000	All other countries.....	36,000,000

Thus the share which Russia has in the total quantity of flax fiber produced in all Europe is exactly two-thirds.

THOS. E. HEENAN,

UNITED STATES CONSULATE,

Consul.

Odessa, January 17, 1891.

TRADE AND TARIFFS OF TRINIDAD.

REPORT BY CONSUL PIERCE.

The tariff embraces both import and export duties. In respect to the former the duties range, as a rule, considerably lower than they do in the tariffs of the other British West India colonies and very much lower than in the tariffs of the Spanish West Indies.

The following table will give the duties of the four principal British colonies south of the United States on some of the chief American products:

Articles imported.	Jamaica tariff.	Barbadoes tariff.	British Guiana tariff.	Trinidad tariff.
Bacon.....	2d. per lb.....	5s. per 100 lbs.....	1d. per lb.....	Free.
Salted or cured beef, dry.	1d. per lb.....	.....do.....	6s. 3d. per bbl. of 200 lbs.	Do.
Bread or biscuits.....	6s. per 100 lbs.....	6d. per 100 lbs.....	2s. 1d. per 100 lbs...	1s. 6d. per 100 lbs.
Butter.....	2d. per lb.....	7s. 6d. per 100 lbs...	1d. per lb.....	1d. per lb.
Cheese.....	.....do.....	.....do.....	.....do.....	Do.
Corn.....	4d. per bu.....	6d. per 100 lbs.....	5d. per bu.....	5d. per bu.
Firearms.....	.....	10s. each.....	8s. 4d. each for revolvers.	5s. each.
Fish:				
Dried.....	3s. per 100 lbs.....	2½d. per 112 lbs.....	2s. 1d. per 112 lbs...	Free.
Pickled.....	4s. 6d. per bbl.....	5d. per bbl.....	4½d. to 8s. 4d. per bbl.	Do.
Flour.....	8s. per bbl.....	4s. 2d. per bbl.....	4s. 2d. per bbl.....	3s. 4d. per bbl.
Hams.....	2d. per lb.....	5s. per 100 lbs.....	1d. per lb.....	Free.
Horses.....	10s. each.....	10s. to £2 each.....	£1 9s. 2d.; stallions, £20 16s. 8d.	Do.
Lard.....	Three-fourths of a penny per lb.	4s. 2d. per 100 lbs...	Half a penny per lb.	3s. per 100 lbs.
Meal.....	2s. per bbl.....	1s. 3d. per bbl.....	1s. 0½d. per 100 lbs...	2s. per hogshead.
Meat, salted or cured..	15s. per bbl.....	5s. per 100 lbs.....	6s. 3d. per 100 lbs...	Free.
Mules.....	10s. each.....	£1 to £1 10s. each...	£1 10s. each.....	Do.
Oats.....	4d. per bu.....	7½d. per bu.....	5d. per bu.....	4 p. ct. ad valorem.
Oil, kerosene.....	9d. per gal.....	2½d. per gal.....	10d. per gal.....	1s. per gal.
Sugar, refined.....	2d. per lb.....	10s. per 100 lbs.....	2d. per lb.....	10s. per 100 lbs.
Tobacco, unmanufactured.	6d. per lb.....	1s. 6d. per lb.....	1s. 3d. to 1s. 8½d. per lb.	1s. per lb.

The trade of this colony with its principal customers in 1889 was as follows:

Country.	Imports.	Exports.*
United States.....	£385,319	£719,931
United Kingdom.....	782,843	674,826
Venezuela.....	†585,585	4,982
France.....	88,876	102,631

* Produce and manufacture of the colony.

† Including £308,979 gold bullion.

The total trade of Trinidad in 1889 was as follows:

Country.	Imports.	Exports.
United Kingdom.....	£782,843	£674,826
British colonies.....	218,638	29,357
Foreign countries.....	1,125,047	862,709
Total.....	2,126,528	1,566,892

In respect to the above tables, it is proper to state that the values on those articles which pay a specific duty can hardly be considered more than an approximation of the true value.

While the duties on the respective articles from the United States are not higher than on the same articles from other countries, the tariff as a whole,

however unintentional, discriminates against American products. Bread, carriages, cheese, corn, oats, flour, meal, muskets, guns, pistols, oil meal, and refined sugar, all of which are imported principally from the United States, pay specific duties equal to ad valorem duties ranging from 10 to over 30 per cent., while earthenware and glassware, furniture, unenumerated manufactured goods, hardware, and textile manufactures, all of which are imported principally from Europe, pay, respectively, an ad valorem duty of only 4 per cent. From all I have learned the only excuse for this is that no drawback for import duties is allowed on the exportation of imports which paid ad valorem duties, while a drawback for the import duties are allowed on flour, refined sugar, and other American articles when they are exported from the colony.

While American flour, as compared with flour from other countries and with rice from British India, is fairly treated, such seems not to be the case with some of the other products which are imported principally from the United States. Kerosene pays the enormous duty of 1s. a gallon, equal to about 150 per cent. ad valorem, because, as I am informed, it is classed as a dangerous article, while gunpowder, almost all of which is imported from the United Kingdom, pays only about one-third as much duty according to value and candles, principally from the United Kingdom, pay only 4 per cent. ad valorem.

Unmanufactured tobacco, coming almost entirely from the United States, pays a specific duty of 1s. per pound, equal to about 250 per cent. ad valorem, while manufactured tobacco, coming principally from the United Kingdom, pays a duty of 1s. 4d. per pound, equal to about 100 per cent. ad valorem.

I now come to the consideration of the export tariff. The export duties pure and simple are limited to asphalt in its several forms. The crude asphalt goes principally to the United States, the boiled principally to other countries.

• Exports and imports pay wharfage at Tobago and at the port of San Fernando, Trinidad. The wharf dues at Tobago on a barrel of flour are 9d. and on 100 pounds of butter 1s.; also, in respect to exports, on a hogshead of sugar 6d. and on a puncheon of molasses 4d. At San Fernando the wharf dues on a barrel of merchandise of any kind are 2d. and on a hogshead of sugar 6d. The wharf dues at San Fernando are so slight that I omit any detailed account of them.

It will also be observed from the inclosed tariff* that a special tax for immigration purposes, popularly known as the "immigration tax," is collected on certain exports from Trinidad. The wharf dues are collected to pay for certain wharf improvements. The immigration tax is collected to defray the expenses of bringing laborers exclusively for agricultural purposes from India to Trinidad.

The cooly immigration system, as now carried on year by year, is substantially as follows: The planters in need of laborers make requisition for them,

* Reserved for publication in "Foreign Tariffs."

specifying the number desired, and through the agency of the colonial government they are brought here from India and indentured to the planters. The requisitions are made almost exclusively by the sugar-planters and seldom by the cocoa-planters. It is estimated by the authorities that the benefits of the imported labor not only attach to the sugar industry, but, in a more or less degree, to the general public and to the molasses, cocoa, rum, and coffee industries; and now, by the ordinance for next year, to the cocoanut industry. The law provides that one-third of the total expense of obtaining these laborers shall be borne by the colonial government and two-thirds by these several industries. The two-thirds of the expense accruing to the industries is provided for as follows: Each planter who indentures immigrant laborers pays £5 per capita for such laborers, and a certain sum (the immigration tax) is fixed annually by the legislative council to be paid on the exported products of these several industries to the receiver-general of the colony.

While it is denied by the colonial authorities that neither the wharf dues nor the immigration tax is an export duty, yet both are levied and collected (the latter exclusively) on exports by officers of the law, pursuant to the law, and they would, therefore, seem to be export duties.

As this question has excited, and still excites, much discussion, an official copy of the immigration tax ordinance is herewith given.

W. P. PIERCE,
Consul.

UNITED STATES CONSULATE,
Trinidad, December 22, 1890.

TRINIDAD AND TOBAGO IMMIGRATION FUND.

[Inclosure in Consul Pierce's report.]

(1) There shall be raised, levied, collected, and paid for the use of Her Majesty, her heirs, and successors, in aid of immigration, upon the several kinds of produce hereinafter mentioned which shall have been raised or manufactured in the island of Trinidad, and which shall be shipped for parts and places beyond the limits of the united colony on any day between the 1st day of January and the 31st day of December, both inclusive, of the year 1890, the several taxes, rates, and charges hereinafter mentioned, that is to say:

Articles.	Rate.	Articles.	Rate.
Sugar:	<i>s. d.</i>	Molasses—Continued.	<i>s. d.</i>
For every hogshead.....	6 6	For every package less than a half	
For every tierce.....	4 4	puncheon.....	0 8
For every barrel or bag.....	0 8	Rum, for every puncheon.....	4 4
Molasses:		Cocoa, for every bag.....	1 9
For every puncheon.....	2 2	Coffee, for every bag or barrel.....	1 9
For every half puncheon.....	1 1	Cocoanuts, for every thousand.....	1 6

(2) For the purposes of this ordinance, every cask whereof the truss is 32 inches or more shall be deemed to be a hogshead, and every cask whereof the truss is 18 inches and less than

32 inches shall be deemed to be a tierce, and every cask whereof the truss is less than 18 inches shall be deemed to be a barrel.

(3) Where any such produce is contained in any package except those above mentioned, such taxes and charges shall be raised, levied, collected, and paid at the following rates, that is to say: On sugar at the rate of 3s. 3d. for every 1,000 pounds, on rum at the rate of 4s. 4d. for every 100 gallons, and on cocoa and on coffee at the rate of 10½d. for every 100 pounds.

(4) The several taxes, rates, and charges hereinbefore specified shall be payable by the shipper of such produce at the time of such shipment aforesaid, and the shipper thereof shall deliver to Her Majesty's receiver-general or subreceiver in Trinidad or the officer performing the duties of Her Majesty's receiver-general in Tobago an account of the produce in such form and containing such particulars as the governor may from time to time direct.

(5) If such account is not delivered, or if the taxes, rates, and charges payable in respect of such produce are not paid to the receiver-general or subreceiver or officer in Tobago aforesaid within 24 hours after the departure of the vessel in which the produce was shipped, the shipper thereof shall forfeit the sum of £100 in addition to the amount of taxes, rates, and charges payable.

(6) All taxes, rates, charges, and penalties payable or recoverable under this ordinance may be sued for, prosecuted, determined, and recovered on information in the name of some officer of customs before any stipendiary justice of the peace in manner provided by the ordinance No. 5 of 1868, intituled "An ordinance respecting the summary administration of justice."

(7) All taxes, rates, and charges to be paid or recovered before a stipendiary justice of the peace under this ordinance shall be paid into the colonial treasury in the island of Trinidad, and carried in the books thereof to the credit of moneys applicable to immigration, and shall be applied in aid of immigration and to no other purpose whatsoever.

(8) When any person is adjudged by any stipendiary justice of the peace to pay any tax, rate, charge, or penalty payable and recoverable under this ordinance, such justice shall state in the order or conviction, and also in the commitment of such person if committed in default of payment, the amount of costs awarded to be paid by such person, as well as the tax, rate, charge, or penalty so adjudged, and shall commit such person until payment of such tax, rate, charge, or penalty, and costs.

(9) All penalties recovered under the provisions of this ordinance shall be for the use of Her Majesty the Queen.

PORTO ALEGRE, BRAZIL.

REPORT BY CONSUL NEGLEY, OF RIO GRANDE DO SUL.

On a sloping hillside projecting into a sheet of water formed by the conjunction of no less than five navigable rivers, at the head of Lake Patos, stands the city of Porto Alegre, the capital of the State of Rio Grande do Sul, Brazil. It is one of the most prosperous and promising, as well as one of the least known, cities of this the latest Republic of South America.

Porto Alegre is not a place of recent establishment. Away back in 1780 it was a village of 1,500 souls; since then its growth has been steady and uniform, until now it numbers about 50,000 inhabitants. Situated 30° south latitude and 57° longitude west from Greenwich, it is blessed with an equable and salubrious climate. Meteorological observations at the city of Rio Grande do Sul, 140 miles south, and with a climate not greatly different from that of Porto Alegre, show that the mean average temperature

for the past 11 years has been 18.88° C. Within that time the extreme variation in any one year has not been greater than 32.40° C. The average rainfall for the province in the year 1887 was 1,026.5 millimetres. With these climatic conditions, and surrounded as it is by a country diversified by hills and plains, timbered, well watered, with a fertile and productive soil, it is not to be wondered at that Porto Alegre should show a healthy progress in wealth and population.

APPROACHES.

The only approach at present from the outside world is over the bar at Rio Grande do Sul and up Lake Patos 150 miles. There is a project for shortening this approach from the north by means of a railroad extending 240 kilometres in a northeasterly direction to the seacoast at Torres, the proposed terminus of the line, and for the construction there of an artificial breakwater and harbor. The concession has been granted, but unaccompanied by any guaranty of interest. Without such guaranty—the usual method of making a thing “go” in this country—the raising of \$15,000,000 (the estimated cost of the scheme) will be no easy undertaking. It will be a long time before the proposed artificial port of Dona Isabel becomes a fact.

In the meantime a concession has, within the past few months, been granted to Dr. João Teixeira Soares, of Rio de Janeiro, for the building of a railroad from Itararé, in the State of São Paulo, south 3,000 kilometres to Santa Maria, a station on the Estrada de Ferro de Porto Alegre à Uruguyana, some 300 kilometres west of Porto Alegre, in the State of Rio Grande do Sul. This concession has a much brighter future, for, besides a guaranteed interest, it will open up a splendid country all the way and will, when completed, connect the southernmost State of Brazil with the federal capital of Rio de Janeiro by means of the São Paulo Railway system. It is, perhaps, the most important railroad concession ever granted in Brazil. Manufacturers of railroad supplies in the United States should not be slow to take advantage of the opportunities offered not only by this, but by the numerous other railroads now in course of construction in this country.

STEAMSHIP LINES.

Communication at the present time between Porto Alegre and Rio de Janeiro, not to mention sailing vessels, is by means of several lines of steamships. Chief among these is the Companhia Lloyd Brasileiro, a combination effected last spring which absorbed nearly all the Brazilian navigation companies plying on the coast north and south from Rio de Janeiro. The united companies are subsidized by the Government to the amount of \$700,000 annually. Next in importance is the Liverpool, Brazil, and River Plate mail steamers, more commonly known as Lamport & Holt's line, devoted exclusively to freight. They no longer transport passengers nor receive a subsidy for carrying the mails, though they still render this service as formerly. These steamers have fixed days for their arrival and departure, are finely officered, and enjoy a lucrative trade. By this line goes the bulk of

the exports from this State to the United States. There is also the Companhia Norte e Sul, with four steamers between Porto Alegre and Recife (or Pernambuco, as it is more commonly known), stopping at the principal intermediate ports and carrying both passengers and freight. This company expects to put on four more steamers, one for freight and three for passengers and freight, about the beginning of next year. Finally, there is the line of the Navegação Costeira, of the English house of John Bellamy & Co., with two steamers between Porto Alegre and Pernambuco, stopping at Bahia and Rio de Janeiro. They expect shortly to put on one more steamer. All the steamers for these various lines were built in England and are owned or backed up by British capital.

Seagoing sailing vessels of light draft pass up to Porto Alegre, while numerous smaller craft, known locally as *hiates* (pronounced "yachties"), carry on an extensive internal commerce up and down the lake.

OBSTRUCTIONS TO NAVIGATION.

Navigation is more or less obstructed by the bar on the coast where the lake debouches into the sea. In consequence of this bar only vessels of comparatively light draft can enter. Many wrecks occur, insurance is high, and freight about double that to Rio de Janeiro. The Government, recognizing the importance of having one safe harbor south of Santos that will admit vessels of the largest draft, and in order to redeem oft-repeated, but long-delayed, promises, thereby satisfying the ardent desires as well as urgent demands of the State of Rio Grande do Sul, with its 1,000,000 inhabitants and its close proximity to the Oriental, ambitious of annexation, has, by a decree passed on the 15th of September last, entered into a contract with the Société de Travaux et Constructions, of Paris—a company with an authorized capital of 3,000,000 francs—for the improvement of the bar of Rio Grande do Sul. The exact terms of this contract have not been made known as yet, but it is understood the Government guarantees the interest on the amount of money necessary for the completion of the work. There was great popular rejoicing at the time of the announcement of this contract, and since then the materialization of the company has been watched with great interest. Mr. Otero, an accomplished engineer of Rio Grande do Sul, has been appointed to represent the Government in the construction of the jetties or retaining walls, by means of which it is proposed to deepen the channel. From time to time French engineers turn up and look over the ground, but as yet nothing visible has actually been done. In due time I hope to furnish the Department a more detailed account of this great work now in progress. For the present, however, the bar exists, and vessels bound for the port of Rio Grande do Sul should not draw over 10 or 10½ feet of water.

In addition to this bar, vessels destined to the port of Pelotas and Porto Alegre have to encounter other troublesome shoals in the lake. On the way to Porto Alegre the Cagussu and Crystal are the two that give the most bother. In dry seasons and when the wind blows from other quarters than

the north the water on these bars becomes very low. When I went up the lake a few weeks ago on the steamer *Canning*, drawing but $7\frac{1}{2}$ feet of water, we stuck fast on the Caugussu, the worst of the two, and lay there two nights and a day. We found one steamer already aground and a sailing vessel that had been there for 18 days. Before we got off two other steamers, one carrying five hundred immigrants, joined the company. Not long ago the *Planeta*, a steamer carrying thirteen hundred immigrants, was aground there for one whole week. It is not uncommon for vessels to lie there for days, and then only get off by having lighters sent to assist them over. This, however, only occurs when the water is exceptionally low, as it has been for the past 2 months.

UP THE LAKE.

As one ascends Lake Patos toward Porto Alegre, to the east stretches a low, sandy beach, separating by only a few miles the lake from the ocean. Here and there wooded spots of comparative fertility may be seen. On this apparently inhospitable shore a number of people are located. They are engaged in the cultivation of onions and other vegetable products, which furnish no inconsiderable amount of freight to steamers bound to the northern ports of Brazil. On the west is an unbroken line of forest, from which the smoke of the settler clearing land continually ascends. There has commenced here an inconsiderate destruction of valuable timber, the want of which will some day be sorely felt. Large quantities of lumber are now imported into Uruguay and the Argentine Republic from North America, while here at their very doors timber is going to waste for the lack of capital and enterprise for its conversion into lumber and transportation to its natural market. The timber is mostly hard wood, and, doubtless, not so good for building as the pine of North America; still it makes a fairly good lumber, while for furniture and railroad ties it has no superior. Sawmills are sure to be erected here at no distant day. Enterprising builders of these and other wood-working machinery should keep their eyes upon this field.

As you approach the northern limit of Lake Patos, the breadth of the waters rapidly narrows and picturesque hills, more or less covered with trees, rise on either hand, presenting a landscape of unsurpassed beauty. The fertility of the soil, however, is not so great as further north and west, where the sierras and elevated table-lands, which extend southward from Rio de Janeiro to the northern limits of the State of Rio Grande do Sul, drop away into a long reach of broken foothills, and from them down again to the plains, which spread out southward through more than half of the State of Rio Grande do Sul and embrace all of the Republic of Uruguay.

THE CITY.

Porto Alegre is a bustling little city—bustling, at least, for a South American city—and is growing rapidly. There are three lines of street railways upon which the American-built cars of John Stephenson run to and fro. The Linha do Menino Deus has two lines, one of 6,154 metres, the other of

6,537 metres, in length. The Linha do Caminha Novo has a line 4,620 metres long, and the Linha do Parthenon one of 4,620 metres. I noticed steel ties from Belgium being laid on one of their lines, replacing the wooden ties, the rails being of the T pattern and raised above the surface of the road-bed. The streets are lighted by electricity furnished by an American plant. Gas is also used upon the streets and in the houses. The manufacture of gas is after the old and expensive style. I should think there would be here and in other cities of this State an opening for the improved American methods for the manufacture of illuminating gas. The public buildings consist of a *Camera*, or government house, which will doubtless become the capitol of the State legislature when the autonomy of the local government has been once established; the governor's residence, a plain, two-story building; the jail, an imposing structure, painted a brilliant yellow, and, unfortunately, given the most conspicuous position on the water front; the custom-house, a public library with 6,700 volumes, and a theater of fair dimensions and appointments. On the suburbs is one of, if not the, largest military schools in the Republic and a new, large, and well-built lunatic asylum. The architecture of the city is after the prevailing Spanish-American style; except in the business portions, the buildings are of one and two stories, brick, plastered and washed white or some gray color, and roofed with tiles.

MANUFACTURES AND COMMERCE.

There are a number of manufacturing establishments in operation and others projected. Among them may be mentioned eight or ten breweries, which manufacture a fair quality of beer, importing their hops and barley from Europe; a paper mill, half a dozen sawmills; several chair and furniture factories, which do a thriving business; an ice factory, tile and brick yards, and a rice mill in course of construction. The proprietor of the latter expects to have his rice raised in this State, where none is yet produced, and to this end is distributing seed and instructions for the cultivation of the cereal. There are many large commercial houses in Porto Alegre engaged in the distribution of imports to the large tributary country which looks to this city for its supplies and in the shipment of the products of the country, chiefly hides, corn, *farinha*, and black beans to the various ports on the South American coast and to foreign countries. The chief American imports are flour, kerosene, resin, turpentine, sewing machines, plows, cornshellers, colliers' axes, cotton drills, and blacking. There is not a single American house here, while the Germans and the English have many large and flourishing establishments. The German element predominates largely in Porto Alegre and surrounding country, the German language being heard almost as frequently as the Portuguese.

IMMIGRATION.

During the past few years, however, many Italians, Spaniards, and this year a large number of Russian Poles, have come into the country. The great majority of these newcomers are located in colonies, becoming culti-

vators of the soil, but in time they will make themselves felt in the villages and cities as well.

Immigration into this part of Brazil for the past 6 months has been phenomenal. Almost every steamer comes in loaded down with immigrants, and nearly all go up to Porto Alegre to be thence distributed through the surrounding country. The exact statistics in regard to immigration and what provisions the Government is making for this vast tide of population setting toward Brazil will be given in another report. Suffice it to say here that, while the immigrants swarming from the overcrowded hives of Europe to these inviting shores will, no doubt, nine times out of ten improve their condition, still for the first few years their way can not be described as a path of roses. Hardships and privations on their passage here and after their arrival will have to be endured.

THE COLONIES.

All around Porto Alegre new colonies are being established and old ones constantly recruited. Yet it must not be supposed that this is an altogether virgin country. Some of the German colonies date back into the early part of this century. One may hear stories of the depredations of the Caboclo and Bugre, the native Indian tribes, remnants of which still exist in the interior; but these stories are traditionary and relate to the early history of the colonies.

Connection with the interior is effected by means of two railroads and five navigable rivers flowing into the head of Lake Patos. Of the two railroads, the Estrada de Ferro de Porto Alegre á Nova Hamburgo extends northward 43 kilometres to the little village of Nova Hamburgo, its present terminus. A few miles this side of Nova Hamburgo is San Leopoldo, the center of a prosperous German colony, founded many years ago and embracing within its municipality or jurisdiction 311 square kilometres and a population of 12,000 people, mostly engaged in agriculture. This railroad is under English control and has a 7 per cent. guaranty from the Government, without which, owing to the shortness of the road, it would not pay. There is some talk of extending the road to the colony of Santa Isabel, a large and flourishing Italian colony 50 or 75 miles west of San Leopoldo. Such an extension would be no less advantageous to the colonies than to the road. San Sebastian is another thriving colony, excellently located as to fertility of the soil, but without adequate means of communication. There are many other colonies scattered around to the north, west, and southwest of Porto Alegre. The soil is excellent, the climate salubrious, but the facilities for marketing produce very deficient.

PRODUCTS OF THE COUNTRY.

To the north and northwest of Porto Alegre you get into the foothills referred to. Here, up among the little valleys and hillsides partly denuded of woods, the soil is usually of a deep red color and of a sandy or clayey

character, very rich and productive. The principal crops are corn, *feijão* (black beans), potatoes, and mandioca, a root from which *farinha* (a sort of nutritious meal) is made. *Farinha* is one of the chief articles of subsistence in the country, besides being largely exported to the north of Brazil. Sugar cane is also raised to some extent, but is mostly used in the manufacture of *caixas* (the liquor of the country), the climate not being sufficiently hot to produce sugar in any quantity. There is a good deal of wine produced, for which the country seems excellently adapted. Rye is also grown, but no wheat or barley. Perhaps the climate is a little too warm, but wheat has been grown with good results in the southern part of the State. Oranges of fine quality and flavor grow in the greatest abundance and are shipped to ports further south. Peaches, plums, figs, and strawberries do well, but neither apples nor the strictly tropical fruits, as bananas and pineapples, flourish, the climate not being cold enough for the one and too cold for the other. Light frosts occur in winter. In addition to these vegetable products, cattle and hogs are raised in large numbers, but cattle not so extensively as in the middle and southern parts of the State.

DIVISION AND PRICE OF LAND.

Up through this country the land is divided into small holdings, largely under fencing, for which stone walls are generally used. Improved land in the San Leopoldo and other older districts is worth about \$40 per acre, and about 60 acres would make an average farm. There is no use to cultivate more. The average farmer and his family can live on this, and that is all he looks for. Camp land, mostly in private hands, is worth \$1.50 per acre in large blocks. There is considerable Government land yet in this State, upon which the immigrants are being located, but the most eligible land has been taken up.

METHODS OF AGRICULTURE.

The methods of agriculture are very crude. The best land is wooded, and has to be cleared, and the thick undergrowth removed by hand. The ax, machete, and hoe come first; then a pair of oxen and a plow complete the agricultural operations. Axes, hoes, plows, and cornshellers are the only agricultural implements for which there is any demand. The plows come from Hamburg and the United States, the cornshellers principally from the United States. There is a growing demand for the American plow, but this is everywhere met by a sharp competition from the cheap German substitute. A few chopping mills for grinding corn, run by water-power, are met with at wide intervals.

CHURCHES AND SCHOOLS.

Churches, both Catholic and Protestant, are found in the *picadoes*, or villages, and in the country. At San Leopoldo there is a Jesuit school which has an excellent reputation, students being sent to it from all parts of the State. In Porto Alegre the enrollment of pupils in the public schools only numbered 885; and as for common schools in the country, there are none.

RAILROAD SHOPS.

The Estrada de Ferro de Porto Alegre á Uruguyana begins at the Margem, 40 miles west of Porto Alegre, on the Taquary River. A steamboat leaving Porto Alegre at 6 o'clock in the morning gets you there at 10 a. m. At the Margem are fine, large railroad shops, much better than would be looked for in an undeveloped country. In these shops I saw a number of locomotives undergoing repairs, mostly of French build. Originally all the locomotives on this railroad were of French manufacture, but they are so complicated that as fast as they give out they are replaced by American (Baldwin) locomotives, which give entire satisfaction. There are already about a dozen Baldwin locomotives on the road. All the machinery in the shops—and most of it is very fine—is of French construction. This railroad, although originally built by a private company under a Government guaranty, is now owned and operated by the Government. At present it extends from the Margem to Cacequy, a distance of 377 kilometres due west. It is the intention to extend the road to Bage and from thence to Uruguyana. This road is likely to develop into one of great importance. It already taps many of the colonies, and along its line, running, as it does, through a country of immense capabilities, others will be started as immigration progresses.

RIVER STEAMBOATS.

Upon the five rivers centering around Porto Alegre more than a dozen small side-wheel steamers already ply, some going as high as 130 miles up the Jachuy River to Cachoeira when the water will permit. Nearly all these steamboats were built in Hamburg. One serious objection to them is they draw too much water for the upper parts of the rivers. A Danish engineer on one of these small boats told me he had just sent out to England for estimates on a light-draft steamboat, built on the American plan, with a stern paddle wheel that can be raised and lowered. If some of our builders of steamboats for the Ohio and Mississippi rivers would put themselves in communication with the parties running these boats, no doubt paying orders could be secured. The Companhia Fluvial is the name of the company above referred to, with headquarters in Porto Alegre. The boats when loaded should not draw over 5 or 6 feet of water, and should be constructed for carrying freight and passengers. The traffic up and down these rivers is already extensive and rapidly increasing.

COAL MINES.

On the Jachuy River, a short distance inland, are the San Jeronymo coal mines, the only ones in this part of South America. A railroad owned by the coal company connects the mines with the river. One hundred and fifty men are employed, and about 700 tons of coal raised monthly. The coal is seamed with slate and is thus inferior in quality. Still, it is used entirely on two railroads and in connection with wood on the steamboats. After many failures of previous companies, the present one is doing fairly well.

FUTURE PROSPECTS.

Within the next few years no little development may be looked for in this part of Brazil. It can hardly be otherwise when we consider its great natural resources, its advantages of climate, the swelling tide of a good class of immigrants constantly pouring into her borders, slavery abolished and free institutions established, the influx of foreign capital for railroads and steamship lines, and the organization of new companies for all sorts of enterprises under the stimulus of increased banking facilities offered by the new national banks. All these things tend in the same direction. To be sure, the other side of the question must not be lost sight of. The late and continuing financial disturbances of the republics to the south point a moral and adorn a tale. With these object lessons before her, it is to be hoped Brazil will avoid similar experiences. But, with all the chances of disaster looming up, it is an open question whether the present movement and activity, more or less unhealthy, is not preferable to the lethargy and stagnation which had taken possession of Brazil, retarding the growth and development of the magnificent resources of this vast and fertile country.

For the United States, also, a new era is opening in the way of increased trade relations with Brazil. Under the lessened burdens upon our export trade likely to be effected by the new reciprocity treaty now in course of negotiation, if reports be true, between the two great republics of North and South America, there is every reason why our manufacturers and merchants at home should avail themselves of the opportunities that will undoubtedly be opened and not allow the alert business men of other countries to longer retain the undisputed foothold they have already secured in this country.

CHARLES NEGLEY,

Consul.

UNITED STATES CONSULATE,

Rio Grande do Sul, December 31, 1890.

IMPORTS AND EXPORTS OF TUXPAN.

REPORT BY CONSUL DRAYTON.

Commerce seems to be progressing favorably, although during the last quarter of 1890 exports have not amounted to quite as much as the preceding quarter; yet, taking the total of the calendar year 1890, which amounted to \$1,955,443.03, and that of 1889, amounting to \$1,650,563.69, there is a balance of \$304,879.34 in favor of 1890, and, if enterprise continues as it has done lately, a very respectable amount of increase in commerce will follow.

The import of lumber has very greatly increased this year, occupying three schooners, with regular trips and freights both ways between Galveston and New Orleans. The increase of American steamers on this line has also had the effect of very nearly running the Spanish line out of this port by taking up nearly all of the freights for New York.

The merchants appear to have become more enterprising, as they have introduced two steamers to perfect their interstate coast trade besides their sailing vessels, which have heretofore been depended on for the facilitating of business. One of these steamers was purchased in New Orleans.

There has been no change as yet made in any of the customs regulations or tariff laws relating to commerce and industry. Finance and exchange are regulated, as usual, by a few merchants doing business in New York.

At present the rate of exchange runs between 20 and 25 per cent.

JOHN DRAYTON,

UNITED STATES CONSULATE,

Consul.

Tuxpan, January 12, 1891.

RICE IN HONGKONG.

REPORT BY CONSUL SIMONS.

In the absence of a custom-house at Hongkong no statistics of the rice imported for consumption and distribution are available, except such as can be had from the Chinese merchants, to whom the traffic is confined; and there being no production of rice in Hongkong, I must confine myself altogether to matters connected with trade in that cereal, together with such reports as to the condition of the crop as are at hand.

While there is no official report on the condition of the growing crops published in China or the rice-growing countries to the south, unfavorable reports of the condition of the crop, especially that in the two southern provinces of China, owing to lack of rain, have already caused an upward tendency in prices. So far as can be ascertained, the crop, which is already for the most part gathered, will hardly reach 70 per cent. of the average in the provinces mentioned, estimated upon the basis of the crop for 1889, which was fully up to the average of good years, and may fall to 65 per cent; in Saigon and Bangkok, 85 to 90 per cent.

The rice coming from Saigon and Bangkok has not suffered any deterioration as to quality; that from China is below the standard of more favorable years.

Owing to the short crop both in China and Japan, it is likely a larger quantity of rice will come to Hongkong from the south for exportation than was received a year ago. Whether in comparison with last year a larger amount will be exported to the United States involves a consideration of the influence which the increase in prices will have. As less than 3 per cent. of the quantity received goes to the United States, it is not likely to suffer a marked diminution.

The old laws, which looked upon the exportation of rice from China with as much disfavor as more recent ones on the smuggling of opium, are still in force, involving seizure and confiscation of the cargo, and not infrequently the vessel, so that the little real Chinese rice exported is practically smuggled out of the country. As may be inferred, most of the rice handled here

comes from Bangkok and Saigon, a little from Hai-Fong and Rangoon, but 95 per cent. from the first two places—from Saigon for 1890 about 6,500,000 piculs (1 picul=133 pounds), from Bangkok about 4,000,000, and 500,000 from other places for 1890. The advance in price so far is from 10 to 15 per cent. per picul. About 80 per cent. of the rice received is taken to Canton, 4 per cent. to the United States and Australia, and what remains after the supply necessary for the support of her two hundred and odd thousand Chinese population in Hongkong is sent to Macan and Japan, the latter country having already for this year received 1,000,000 piculs.

That shipped to the United States and Australia is principally Chinese rice of the best quality. It may be said that all the rice received in Hongkong is unclean, with the exception of that brought from China, the average of paddy being about 20 per cent. It is prepared for market here, with the exception of that shipped to Canton, which, owing to the cheapness of labor in comparison with Hongkong, is cleaned there.

The cost of cleaning is 25 cents (Mexican) per picul, one man doing about $2\frac{1}{2}$ piculs a day. The process is slow and the labor most harassing. It is first run through hand sieves to separate the paddy from the grain, the latter to be treated as described further on. The paddy is first run through a machine made of wood, shaped not unlike a set of millstones, both sawed from a log about 3 feet in diameter. Into the face of the under block, and flush with it, is let a circular stone of a diameter to leave a 5-inch rim of wood. This stone is opposed to an opening or eye in the upper block of a like diameter, into which is fitted a board perforated at the periphery. The opposing surfaces of the two blocks are cut into grooves three-eighths of an inch wide, one-fourth of an inch in depth, and about the same distance apart, the intervening ridges of wood being carefully trimmed every 3 hours, in order to be kept sufficiently sharp. The upper block is dragged round by means of a hook at the end of a wooden handle fastened to a staple driven into the rim, a single workman turning it and at the same time feeding the machine by throwing the paddy with a wooden paddle into the eye, from which it is distributed outward by the centrifugal force. This breaks and loosens the husk from the kernel, after which it is run through a fanning mill constructed with about the same regard to mechanics as the rudimentary machines described above.

The grain, divested of husk, is now ready for the scouring process, which is done in stone mortars holding, perhaps, a bushel. These are set into stonework level with the floor at an angle of about 30 degrees, twenty or more being distributed about, according to the size and shape of the room. A wooden framework is built over the mortars in such a way that a stone pestle weighing 25 pounds, fixed to a beam 5 feet long pressing over a fulcrum, is rapidly dropped upon the grain. This is accomplished by a workman, who steps quickly upon the short end of the lever and as quickly removes his weight when the pestle has been elevated to the highest point. The number of strokes considered necessary for this part of the process varies,

with the kind of rice, from 2,000 to 4,000. Ashes made from rice husks to the amount of one-fourth of a pound are added to each mortar of grain at the beginning of the pounding and a second time when the pounding is half finished, the rice by this time having become quite warm.

It is now taken from the mortars to be sifted, after which it is replaced for foot-scouring, ashes being added for the third time. A barefooted workman, supported from falling by reclining in a kind of swing, treads in the most dependent part of the mortar, which causes a rapid movement of the rice. This is continued for from 30 to 40 minutes, when it is taken out and sifted and is now ready for market. A part of the dust, composed of ashes and disintegrated rice resulting from the scouring, is combined with 10 per cent. of salt and used in preserving vegetables. What remains is fed to swine. Crude as these appliances are, they accomplish the work with the least breaking and crushing of the grain possible, and, no doubt, comprise most of the principles upon which rice-cleaning machinery is or should be constructed.

Since improved machinery propelled by steam is in use in Bangkok and Saigon, the question naturally presents itself why it is not used here and in China. The rice merchants say that, owing to the cheapness of labor, it would not be profitable in Hongkong and would not be permitted in China, where a vast number of people find in that employment their only means of earning a living.

O. H. SIMONS,
Consul.

UNITED STATES CONSULATE,
Hongkong, October 23, 1890.

IMPORTS OF RICE AT MATANZAS.

REPORT BY CONSUL PIERCE.

I have the honor to inclose for the information of the Department an excerpt from the *Avisador Comercial* of the 11th instant, a paper published in Havana, purporting to be a true statement of the imports of rice into the port of Matanzas during the 5 fiscal years ended June 30, 1890.

In connection with same, I would state that the imports from Antwerp, Hamburg, and Liverpool, amounting in the aggregate to 39,427,998 kilogrammes, were shipped originally in the husk from India and cleaned in the ports named for reshipment.

This amount, with the 2,673,078 kilogrammes received direct from Rangoon, making a total of 42,101,076 kilogrammes out of a grand total of 42,181,526 kilogrammes, shows to what an extent the island is dependent on India for one of its chief food supplies. The residue (excepting only 130 kilogrammes of American rice received from New York) of 80,320 kilogrammes represents the imports into this port from Spain of Spanish rice, and when it is considered that this extends over 5 years the insignificance of the commerce in this article with the mother country will be apparent. I

have no doubt that a similar statement from other ports of Cuba would show a like state of rice imports. The very large importation from Liverpool under the Spanish flag is explained by the fact that there are several large British-built freight steamers, with Spanish register, plying between the United Kingdom and this island.

FRANK H. PIERCE,

UNITED STATES CONSULATE,

Consul.

Matanzas, December 15, 1890.

RICE IN INDIA.

REPORT BY CONSUL-GENERAL MERRILL, OF CALCUTTA.

As there are fourteen hundred varieties of rice in India, it is not a matter for surprise that this valuable article of food should be planted and reaped each month of the year. The staple crop, however, is sown from April to June, transplanted from June to August, and gathered from November to January.

Since rice is almost the only food of millions of the inhabitants, and as there is an export duty on it, comparatively little goes to foreign countries. The figures appended show the entire amount exported from the various presidencies and provinces of British India for the years ended March 31, 1889 and 1890.

From—	1889.	1890.
	<i>Cwts.</i>	<i>Cwts.</i>
Bengal.....	6,417,006	5,992,486
Bombay	589,384	798,971
Sinde.....	19,347	69,828
Madras.....	1,537,727	1,654,447
Burmah.....	14,204,765	18,258,519
Total.....	22,768,229	26,774,251

As this consulate-general is only in communication with the districts on either side of the Bay of Bengal, the information collected is necessarily confined to the province of Burmah and the presidencies of Bengal and Madras.

In Madras there were 1,253,900 acres planted in rice last year and 1,272,100 acres this year. Almost this whole product is consumed by the inhabitants, the amount exported yearly running from 100,000 to 160,000 cwts. The rains have been general, and everything seems to favor a crop equal to the excellent one of last year. Shipment of what little is exported begins in February, and the prospect is that there will be fully as much as usual for this purpose. Of course, it is quite impossible at this early date to compare the quality with last year's crop, but everything gives promise of its being above the average.

In Burmah last year the acreage was 3,917,987 and this year it is 3,380,861. Last year's crop was very large and would have been an exceptionally

fine one had not unseasonable rains in February damaged much of it while lying out. A large quantity deemed unfit for the European market was shipped to the Straits Settlements.

The total amount sent out of the country from January 1 to October 25, 1890, was 3,244,880 cwts. more than was shipped in the entire year 1889. The following table shows the quantity of last year's crop exported from the ports of Burmah up to October 25, 1890:

From—	To—		Total.
	Europe.	America, Straits, China, Japan, etc.	
	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>
Rangoon.....	8,050,000	8,291,960	16,341,960
Akyab.....	2,615,920	1,140,500	3,756,420
Bassein.....	2,791,680	280,640	3,072,320
Maulmain.....	423,300	870,360	1,293,660
Total.....	13,880,900	10,583,460	24,464,360

Of this, there were sent to South America 892,000 cwts. and to the United States 4,000 cwts. The total exports for 1889 were 21,219,480 cwts., being 3,244,880 cwts. less than have been exported thus far in 1890.

The decrease in acreage this year, as compared with the last, is due to floods and to the mortality among cattle used for plowing in Bassein and Maulmain. The probabilities at present are that the amount exported from Burmah in 1891 will be less than in 1890, but that the quality will be better.

In Bengal vast districts are devoted to the cultivation of winter rice, amounting in 1889 to 32,351,032 acres and this year to 32,834,432 acres. On account of floods from which certain parts of this presidency suffered during last summer it is thought the crop of this year will not equal in quantity that of 1889. Most of the districts, however, have been favored with frequent and not too copious showers, with a cessation at the proper time, and everything gives promise of an excellent product. On account of the superior character of the grain and the increased acreage it is quite possible that the growing crop will be equal in value to that of last year, but it is probable a less amount will be exported.

The following statement shows the total quantity of rice exported from Bengal to Europe, South America, and the United States during the 10 months from January 1 to October 31, 1890:

	<i>Cwts.</i>
Europe.....	1,075,652
South America.....	346,719
United States.....	2,074

Repeated efforts to secure further information were unavailing.

SAMUEL MERRILL,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Calcutta, November 26, 1890.

THE RICE CROP OF SIAM.

REPORT BY CONSUL-GENERAL CHILD, OF BANGKOK.

I have the honor to report that the crop for the year 1889 was a partial failure, owing to the lateness of the rains, and, in consequence, paddy (un-hulled rice) became very scarce and commanded such a high price in the local market that many of the mills stopped running, because it was impossible to compete with rice from Java and Saigon.

The following table shows the output for the last 5 years, from which it will be seen that the export in 1889 was 46,501 tons less than in 1888, the total export in 1889 being 303,088 tons, of which 69,619 tons were sent to Europe:

Year.	Quantity.	Value.
	<i>Tons.</i>	
1885.....	217,179	£980,864
1886.....	215,387	1,090,489
1887.....	402,016	1,918,783
1888.....	449,446	2,104,849
1889.....	303,088	1,443,328

Much of the rice shipped from Bangkok to Hongkong during the year 1889 found its way to California, owing to the failure of the crop in Japan, from which country America receives a large supply.

There were no direct shipments to the United States during the last year, but several cargoes were dispatched by sailing vessels to Vancouver.

The present year's crop will undoubtedly be the largest that the country has ever raised, as the season has been perfect, owing to the equable rainfall.

The export of rice for the first 6 months of this year has far exceeded the average, and the export for 1890 may safely be put down at 550,000 tons.

The following table shows the export of rice for the month of September, 1890, as compared with the same month of the year 1889 :

Month.	Nasüen rice.	Broken rice.	Paddy.
	<i>Piculs.*</i>	<i>Piculs.*</i>	<i>Piculs.*</i>
September, 1890.....	685,203	7,833	374
September, 1889.....	418,577	5,609	2,642
Increase.....	266,626	2,224	.....
Decrease.....	.....	.....	2,267

* 1 picul is equal to 133½ English pounds.

The great bulk of the rice exported is mill-cleaned Nasüen, and the value per picul, as entered at the custom-house by the exporters during last month, was as follows: Mill-cleaned Nasüen, \$1.80 (Mexican); broken rice, 90 cents; and paddy, \$1.10.

Siamese rice is divided into two classes—Nasüen and Namüang. The former is sown and afterwards transplanted, while the latter is scattered over the field and allowed to come up without further care.

The buying price in Bangkok of the Nasüen paddy is at present \$24 (Mexican) per coyan.*

By a comparison with the former table it will be seen that the miller buys at \$1.26 per picul and sells at \$1.80, thus having a margin of 54 cents profit per picul, from which must be deducted the cost of milling and bagging.

The milling and export of rice gives a larger return of profit for the capital invested than any other industry in Siam. It is not, therefore, to be wondered at that rice mills are always in process of construction here. At present there are in Bangkok 23 steam rice mills, of which 17 are in the hands of Chinese. Eight new Chinese mills were erected during the year 1889 and 2 British. During the present year 2 new mills have been erected and 3 more are being built.

There are now 5 mills in Bangkok which produce white rice, but the great bulk of the export is mill-cleaned rice containing 20 per cent. of paddy. It is shipped in this form, as the cargo keeps much better than when every grain is hulled.

The most modern machinery is used in the mills, and, although the owners in a majority of cases are Chinese and are very close in business matters, yet they hire the very best European engineers.

The fuel of the mills consists entirely of the husks of the rice, which are consumed in specially built husk furnaces.

Many of the mills are lighted by electricity and employ two sets of men, by which they are enabled to run day and night.

In conclusion, let me say that in the near future Siam's annual export of this most valuable cereal will be wonderfully increased, as the country is now about to be opened up by the construction of railroads, which will bring vast sections of country which were formerly uncultivated into connection with the market at Bangkok. At present not one-tenth of the available acreage of the country is under cultivation, and we can confidently expect to see the export increased treble or fourfold within a few years.

There is no scarcity of labor. All that is needed is access to market, and this the railroads will soon furnish and cause Siam to be one of the largest rice-producing countries in the world.

JACOB T. CHILD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Bangkok, October 22, 1890.

* 1 coyan is equivalent to 26 piculs, or about 100 bushels, and yields 19 piculs of cleaned rice.

PROFIT-SHARING.

REPORT BY CONSUL-GENERAL NEW, OF LONDON.

I have the honor to inclose herewith a copy of a report on profit-sharing made by Mr. J. Lowry Whitté, of the British patent office, and presented to Parliament by the board of trade.

JOHN C. NEW,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
London, February 11, 1891.

PROFIT-SHARING.

[Inclosure in Consul-General New's report.]

To the Assistant Secretary, Commercial Department, Board of Trade :

SIR: In compliance with the instructions of the president of the board of trade, conveyed to me by you on the 28th of April, 1890, I have the honor to submit the following observations on the practice and development of the system known as "profit-sharing" in connection with wages in industrial enterprise.

The term profit-sharing has found such general acceptance in recent years that for the purposes of this report it is adopted in preference to industrial coöperation, industrial partnership, class coöperation, and many names which have been suggested from time to time. This term profit-sharing is here employed to describe various business arrangements, all having this principle in common, that the people engaged in the concern, or an appreciable portion of these workers, shall receive, in addition to their salary or wages, some pecuniary advantage, prospective or immediate, to be paid out of the net profits in any year in which net profits are made.

CHIEF FORMS OF PROFIT-SHARING.

This advantage is received in many forms:

- (a) In some cases it is given as a gift or thank offering to the workers, or a portion of them, for the success of the year, a gift popularly described as a bonus.
- (b) In others a definite part of the profits is paid over to a provident fund for the benefit of each participating workman in cases of sickness or old age.
- (c) In a large number of instances this share allotted to labor as extra wages is set aside to secure the workman an opportunity of becoming a joint owner in the business of which his labor has contributed to increase the income.
- (d) In others, again, each workman receives out of the net profits a cash payment, determined by the proportion of each man's contribution in labor to the total amount of labor done.

In all these cases, where the scheme is settled in due time and made fully known to the employes, each workman is, so to say, invited to consider his own labor as an improvable quantity—an item in the business enterprise which his own will may render more useful to the general result—to look to a reward for this extra contribution beyond the labor paid for by wages in a share of the profits at the end of the year.

GENERAL HISTORY OF MOVEMENT.

Profit-sharing, under various regulations, was brought into operation in France about 1848. These schemes attained some popularity in England about 20 years later. In France the re-

sults have been substantial. Over 81 firms, representing a great variety of commercial enterprises, are stated to have adopted this policy in one form or another. Several have practiced it for above 40 years, and represent many thousand employes. The system has had considerable success in Switzerland, and in later times its teachers have found numerous disciples in the United States.

SUGGESTED RESULTS.

In many of the establishments where profit-sharing has been practiced a considerable increase of profit has accompanied the development of the policy, and it is the contention of its advocates, like M. Leclair and M. Laroche-Joubert, that where it is in operation the money set aside for the benefit of labor is not any transfer of cash from the pockets of the employers to those of the employes. It is paid out of a fund which owes its existence to the profit-sharing system. The evidence on this subject of many who have tried profit-sharing will be stated later on. Here it will be sufficient to point out that this additional profit is supposed to arise from five sources :

- (1) Reduction of waste material.
- (2) Superior excellence in the work done.
- (3) Diminished expense of superintendence.
- (4) Greater stability in the staff and consequential reduction of risk in commercial enterprise.
- (5) Increase of practical information connected with the business, the workers being stimulated to aid the managing staff with suggestions as to improvements and information as to new processes.

The first two considerations directly affect the outturn, the third and fourth the cost of production, whilst the fifth has relation to the general progress of the business.

GREAT VARIETY IN THE COMBINATIONS.

The portion of this fund accruing to the actual worker may, as we have seen, reach him in various ways. It may be paid him directly in cash, as in (*a*) and (*d'*), or it may be put to his credit with a view of securing him a share in the capital of the firm, as in (*c*), or it may be a deferred benefit for sickness or old age, as in (*b*). Sometimes we find the additional remuneration to labor secured by a combination of the methods (*b*) and (*d'*), or of (*b*) and (*c*), or of (*c*) and (*d'*), or again of all three.

The different modes of profit-sharing already enumerated have in various ways, if we may rely on the evidence of capitalists who have tried them for years, developed a higher order of efficiency in the workman, have produced larger profits and better relations among all concerned in the business, and the choice of one or another of them in any particular case seems to depend upon such considerations as the nature of the business and the economic and intellectual condition of the workmen to be called into partnership. If they are thrifty, saving men, the opening to them the chance of securing shares in the firm by giving them the right of purchase, the aiding them by a division of profits to accumulate the necessary capital are ample means for the purposes in view. If, on the other hand, the workers are poor men living from hand to mouth, who have not hitherto saved any money, whose thoughts have never been directed to saving or to the occupation of a capitalist, the prospect of gradually building up a right to a share is too remote and nebulous to produce the desired effect of stirring the energies of the workman, whilst the assurance of an additional sum in hand to meet the winter expenses of living is something of which the advantage can be easily understood.

Bonus form (a).—Defective as the bonus system is considered by writers on this subject, defective as it is in comparison with such perfectly organized machinery for securing at once excellence of work, remuneration, and comfort to the workman, as we find in some of the French profit-sharing firms, this practice is not to be despised as a preliminary stage. It draws closer the bonds of sympathy and interest between the employer and his people. It gives the workman a pecuniary interest in the prosperity of the house, and thus quickens his observation of the signs of prosperity of the mechanism of the business of which he is a part. M.

Leclaire, who may be considered the inventor of profit-sharing as we are now considering it, himself tells us that he began on this system, giving presents and extra pay to his best workmen. A large number of the houses popularly described as practicing profit-sharing are only, strictly speaking, at this earlier stage.

The Piat Iron Foundry, at Paris and Soissons, has for some years adopted a system of bonus. In this case very happy relations existed between the employer and his people. Benefit societies were formed many years ago, and the funds of these institutions received liberal donations from the house. In 1881 M. Piat announced that a portion of the net profits would be distributed each year among workmen who had been 5 years in his service. What this portion shall be is a matter which M. Piat decides for himself; but, as long as there are profits, the workman knows that he is to have a share, and it has varied from $8\frac{1}{2}$ per cent. of wages in 1882 to 3 per cent. in 1885 and was 4 per cent. in 1889. During these 8 years £6,595 has been distributed on this system. The number of participants has steadily increased from 145 in 1882 to 206 in 1889. The benefit societies and kindred institutions connected with this firm for 40 years past give the workman many reasons besides his wages for wishing well to it and desiring to continue in the service; but M. Piat, in conversation, expressed his thorough conviction that the bonus system, which is of comparatively recent introduction, had produced direct results, not only moral, but material. He dwelt particularly on the actual improvement in the work done. The report of his firm to the Paris Exhibition of 1889 concludes: "M. Piat is able to say that the honors given his house at international exhibitions are, in a great part, due to this system."

The preserve factory of Mr. Hartley, at Liverpool, is an English illustration of this mode of interesting employes. Mr. Hartley has always sought to maintain relations of paternal benevolence with his work people, numbering over 1,000. His factory is a model of salubrity. A well-arranged apartment is provided, where 500 persons can have their meals cooked and consume them in comfort. All the arrangements of this establishment indicate an employer who has been anxious that his prosperity should redound to the well-being of his work people. Three years ago he announced his intention to set aside a portion of the profits each year, to be distributed amongst the most deserving of the workers in such sums as he and his managers might determine, and this system, he finds, has stimulated the interest of the workers in the concern.

This simpler form of profit-sharing has long prevailed in many large establishments throughout this Kingdom as regards the managing staff. The number of cases in which it has been extended so as to include a portion of the ordinary laborers is increasing every day. It is practically, in a less definite form, what M. Leclaire tells us his system was in the beginning.

The bonus system is in many cases the chrysalis stage of profit-sharing.

Provident fund form (b).—The simplest plan of profit-sharing by way of a provident fund, as in form (b), is that advocated by M. de Courcy and applied in the *Compagnie d'Assurances Générales*. Five per cent. of the profits are set aside every year to form a fund upon which every employé, after 12 months' service, has a claim in the proportion of his year's salary to the total amount of profits set aside. Every year the portion of the profits accruing to each worker is added to the fund and accumulates at compound interest until the employé has worked 25 years for the house or is 65 years old. He can then invest the sum standing to his credit in such securities as he may select, but until then he can not interfere with the accumulation. On this system the average annual credit to each employé from 1885 to 1887 was over $32\frac{1}{4}$ per cent. of wages.

In the case of M. Deberny & Co., type-founders, of Paris, we have M. de Courcy's plan applied to workers of very different training and habits. For some 40 years this firm has pursued one system or another of profit-sharing, and for the last 18 years the share of labor has been assigned to a provident fund. Every employé is entitled to some portion of the dividend on labor, and these portions are paid over to a mutual aid fund, which is the property, in certain proportions, of all the participants. This fund secures pensions varying in amount according to the sum standing to the credit of the pensioner. From 1880 to 1882 the sums

accruing to the fund in annual dividend amounted to 17 per cent. of the net profits and to $7\frac{1}{2}$ per cent. on the wages.

The practice adopted by Messrs. Cassell for some time in this country has some resemblance to that of M. Deberny. When the firm was converted into a limited company in 1883 there was in existence a considerable provident fund for securing pensions to the employes. This fund had been formed partly by gifts of retired partners, partly by a percentage of profits; and the articles of the new association provided that, after suitable additions to the reserve fund and payment of 5 per cent. on capital, 5 per cent. of the remaining profits should henceforth be paid over to the fund. Under this arrangement the annual payments have averaged £914 1s. Every employe, after 5 years' service, acquires a claim in case of his death whilst in the service of the firm, the amount due to his family varying according to the length of his service. After providing for the claims of each year, the balance of income is invested in the stock of the company. In 1889 the qualified employes had claims on a provident fund of over £9,000.

Form (c).—Of the third, or stock, system of profit-sharing the iron foundry of Messrs. Godin, at Guise, is, as at present constituted, the most noted example. We have there a concern employing nearly 1,600 hands, and profit-sharing has been in operation under different forms since 1877, with the result that in 1889 961 employes received additions to their wages. The Godin system began, like that of Leclair, in a bonus. It then passed into a cash payment, and, on the firm being converted into a limited company, the additional gain to labor was given in the form of accumulation towards the purchase of shares. Of the net profits, 25 per cent. goes to a reserve fund, 25 per cent. to a bonus to management, and 50 per cent. is allotted to capital and to labor as extra profit to each, the proportion between the two being determined by the respective amounts paid in interest and in wages. In 1880 the sum paid in interest on capital was £9,200; that in wages, £75,520. Thus a very substantial part of the net profits goes for the benefit of the laborer, and these profits are accumulated so as to secure the participant a share in the company.

The achievements of M. Godin are of such high importance for many questions affecting the relations of capital and labor that some further notice of his work as bearing on the present subject is here necessary. Starting with very small resources, having no local advantages except proximity of coal supply, dealing with a labor supply of the rudest sort, he has converted an obscure village into a great seat of manufacture. The success of his celebrated foundry has overflowed for the good of others. Attracted by the surplus female labor of his metal-working population, capital has flowed in and yarn mills are springing up around him. Out of a squalid; ignorant peasantry he has produced an industrial community with the discipline of a regiment and the commercial alertness of the market place; but, although the opinions of M. Dequenne, the present chief of the concern, on the economic results are most important for the purpose of this report, and the rules of this famous establishment throw light on particular points, it is not intended to examine here in detail the system at work at Guise.

M. Godin began with a laboring population in an economic condition very different from that to which a large proportion of the British laboring classes engaged in trade and manufacture have attained. It was possible, almost necessary, for M. Godin to take charge of his workmen as a father and to guide them with judgment and sympathy in all the relations of life from the cradle to the grave; but this affectionate supervision it seems very doubtful whether our workmen would recognize as an advantage, even did the temper of our national life give them the opportunity. I will therefore refer you for a fuller account of this interesting place to the work of M. Bernardot, to the excellent summary of the institutions at Guise in M. Robert's forthcoming report, and to the other authorities mentioned in the appendix.

I would only point out here, in reference to the particular subject on which I have cited the practice of this renowned establishment, namely, the distribution of profits by way of shares, that this form of profit-sharing was adopted after long experience of other forms. There was first the bonus; there was the most liberal and far-reaching system of benefit

societies; there was for many years the payment in cash. By these various expedients M. Godin trained his people to become his fellow-shareholders. He abandoned the payment in cash, as in form (c), because, taken with the other parts of his system, it had prepared the way for one more satisfactory. As evidence of the practical way in which this stock system is connected with actual work at Guise, it may be mentioned that in 1880 the number of workers who shared in the profits was 550; in 1888 it had risen to 961.

An examination of the English examples of profit-sharing will show that the stock system was long the one most popular in those cases where profit-sharing has been introduced into existing business concerns.

The Woodhouse mills is a familiar illustration. An old-established firm engaged in the manufacture of woollen and worsted goods was converted into a limited company with £1 shares. The interest on capital, whether loan or share, is fixed at 10 per cent. Of the net profits, after payment of interest, 10 per cent. goes to a reserve fund, 40 per cent. to be disposed of as the managers think best in rewards for special services or allowance on custom, 50 per cent. to a dividend on labor, and the portion going to each workman is placed to his account as share capital.

In the association formed some years ago by Messrs. Joshua Hoyle & Sons we have another effort to arrive at the results of the stock system—the giving the workman a direct share in the profits of the concern. This firm, then the property of two partners, was in 1873 converted into a limited company “with the primary design,” as the articles of association tell us, “of admitting the work people in the company’s employ from time to time to become shareholders, and thus to participate in the profits of the concern.”

The 31,200 shares of £7 10s. (£5 paid) were divided into two classes, 23,400 to be called “retained shares,” and representing the interests of the two partners in the original firm. These partners became governing directors of the new company and were “to retain the full and supreme control in the management of the company’s business and affairs.” The other 7,800 shares are called “industrial partnership shares,” and of these anyone in the employ of the company might become a holder. He either paid the calls in cash as they fell due or the firm credited him with the amount, charging 5 per cent. interest. Thus, if the net profits allowed of a dividend at the rate of 10 per cent. or 10s. on each paid-up share, the workman would get a benefit of 5s. on each share allotted him, and the firm believed that this giving away of the right to profits would be fully made up to them by the increased energy and contentment of their employés. The scheme made considerable progress during the more prosperous period of the cotton trade, and at one time 2,412 of the industrial partnership shares were held by employés; but, with reduced dividends, its popularity waned. It is still, however, in operation, and 707 of these small shares in this great establishment are now held by those engaged in the business, seventeen of the holders being engaged in manual labor at wages averaging 25s. a week.

The articles of association are an interesting record of an attempt to apply profit-sharing to the larger forms of commercial enterprise. Very careful and full precautions are taken to secure the authority of the directorate. Full provision, too, is made that the industrial partnership shares shall always be held in connection with actual work in the concern. If a workman holder wishes to sell, he can either sell to the governing directors or to some one approved by them, who, if not a workman, is a trustee for the share until they nominate a workman willing to pay its market value.

The firm of Messrs. Tangye Bros., of Birmingham, is another illustration of an effort to arrive at something like the stock system. They have always had the most pleasant relations with their employés. They have established various institutions for their benefit—mess rooms, schools, sick funds—some entirely at the expense of the firm and others mainly supported by them, and about 7 years ago they began a system of partnership for employés. To each of a certain number of their work people a £50 bond was issued binding the firm to pay to the workman interest on this sum at a certain rate. In the case of the death of the workman during the year, his family obtain the amount, £50 in cash. This is, however, rather a fixed bonus

or system of rewards than profit-sharing properly so called, as the bonds impose the payment of interest irrespective of any profits.

The policy of the Godin firm is that the workmen shall gradually become owners of the business. This object is kept in view on the Leclaire system; but there it is carried out by means of the provident society, which is a corporate body representing the workmen, and recruited from the ranks of the workmen, and exercising the rights and authority of a partner subject to certain qualifications.

This stock system has been objected to by many, who contend that the object of profit-sharing should be, not to increase the number of capitalists, but to secure better relations between capital and labor. Such criticism, however, raises the question whether, in cases where this mode of remuneration is practicable, any better way of improving the relations between employer and employé is likely to be found than that of making the laborers joint owners of the concern. Where such an achievement is possible, we may be sure that the relations between the capitalist employer and the employed are not likely to be of a very unpleasant kind.

Given workmen with savings to invest or the credit to obtain money to purchase shares, good must, on the whole, result from this process of investment by the laborers in the business, as long as the investment is actually going on; but, if this system is to operate permanently on the relations between the workman and the employer, the ownership of the shares must be expressly connected with employment in the firm. In many instances, as in those of Messrs. Hoyle, M. Laroche-Joubert, and others, on the workman eventually dying or retiring from work his share becomes purchasable either by the firm or by some fund partly owned by the firm and the workmen, but always so as to be available for some workman to come after, and thus the stock system is secured a permanent influence on the relations of labor and capital. In the Hoyle rule 125 are contained provisions for ascertaining the proper value of such shares at any particular date.

Cash payment form (d).—In connection with the fourth form of profit-sharing, denoted as (d), English readers naturally think of the celebrated scheme adopted at Messrs. Briggs's Whitwood collieries in 1864. The cash payment to labor has been long since abandoned, but the experiment deserves attention, not only on account of the interest it created at the time, but because it affords many useful suggestions as to the conditions in which such schemes may be usefully tried.

When the concern was converted into a limited company, a preference was given to employés of the firm in the allotment of one-third of the capital; but more remarkable than this provision to create a workman shareholder class was the rule that, whenever the net profits "shall exceed 10 per cent. on the capital embarked, all those employed by the company, whether as managers or agents at fixed salaries or as work people, shall receive one-half of such excess profit, * * * to be distributed amongst them in proportion to, and as a percentage upon, their respective earnings during the year in which such profits shall have accrued." This distribution was to be made in cash.

The scheme excited attention all over the world, and continued in operation until 1875, when it was finally abandoned so far as the percentage on wages was concerned. During these 9 years £34,000 had been distributed in percentage on wages, and the coal trade had undergone the most remarkable vicissitudes. Much difference of opinion arose as to the mode of ascertaining the net profits. The whole scheme was new and the conditions of business exceptional, while there had not previously existed between the proprietors and the work people those relations of personal knowledge and mutual confidence which have hitherto been the invariable antecedents of any successful adoption of such arrangements. The coal-mining population from 1868 to 1873 was one of the most fluctuating in all England, while the admission of new shareholders into Messrs. Briggs's firm brought in an employing element without either special experience of the business or confidence in the new policy.

One of the best examples of this kind of profit-sharing is the paper manufacture of M. Laroche-Joubert. In this concern, as in that of M. Godin, we have a large manufacturing business which began, just as his did, from small resources. Its capital is now nearly £200,-

000, and it gives employment to some 1,500 persons. It has practiced profit-sharing for nearly 40 years, and one of its special characteristics is that the whole of the dividend is payable in cash. Provision is made for the admission of workmen shareholders, and nearly a quarter of the shares now belong to people engaged in the business and not being the managing directors; but M. Edmond Laroche-Joubert made it a point of principle that the share of the net profits assigned as dividend on labor should be paid without any further restriction or qualification, it being left to the providence and good sense of the workman to say how the cash was to be applied, whether in the purchase of shares in the firm or otherwise. The mode of distribution is somewhat elaborate, but, as in this firm we are dealing with an establishment which differs from the *Maison Leclaire* in the large proportion which the capital engaged bears to the cost of labor, these rules deserve careful examination.

The gross profits are charged, first, with 5 per cent. to capital; secondly, with 5 per cent. for depreciation; thirdly, with a contribution to a special reserve fund not to exceed £600. Of the balance of profit remaining, 5 per cent. goes to a general reserve fund, 20 per cent. as additional profit to capital, 17 per cent. to the managing directors in addition to their salary paid among the ordinary expenses, and 58 per cent. for division among the rest of the staff and a certain number of customers. The first charge on this balance is a dividend on the custom of certain French houses, which up to 1882 amounted to about one-fifth of the balance. Of the other four-fifths, one-quarter, or 25 per cent., of this latter fund goes as extra payment, according to wages, to everyone who has been one year in the firm and is over 15 years of age. The other 75 per cent. is assigned—35 per cent. to the commercial departments and 40 per cent. to the mills and factories.

Thus, assuming, for purposes of illustration, that the 58 per cent. of the net profits amounts to £5,000, £1,000 of this sum would go as dividend to custom, £1,000 more as a first distribution to labor, £1,400 as a further dividend to be distributed according to the rules adopted in the commercial departments, £1,600 for distribution according to the rules applying to the mills.

The first of these distributions—the 25 per cent. of the balance after percentage to custom—is made at large throughout all branches of the business on the basis of wages, but with an additional share for each workman who has given 5 years of service. Thus a man earning 1,000 francs has his wages after 5 years calculated, for the purpose of distribution, at 1,250 francs; after 10 years' service, at 1,500 francs, and so on until the workman is over 50 years old (rule 13).

The lump sums assigned to the separate branches of the business are distributed among each mill and warehouse under special rules, framed with the view of rewarding management and labor in accordance with the relative importance of the one or the other in particular sections of the work. Of these sums allotted to the branch establishments a certain portion, varying from 10 per cent. in the sale branches (rule 4) to 50 per cent. in the packing-paper rooms, is first of all distributed in proportion to salary to all persons employed in each mill or warehouse, and this is in addition to the general dividend of 25 per cent. of the net profits declared in the first instance. The balances of these separate funds are distributed between the superintending staff and the foremen in proportions varying in each section.

The elaborateness of these rules has been a frequent subject of criticism, and in 1876, and again in 1883, M. Edmond Laroche-Joubert defended them before public commissions as guarantying to each of his co-operating workmen their due share. M. Edgard Laroche-Joubert entertains the same view and assures me that, whilst their operation is fully understood by the work people, they involve no practical difficulties of bookkeeping, neither controversy nor expense.

The Angoulême firm is the more remarkable in this respect, that, whilst the workmen and their children have many advantages provided by the liberality of the Laroche-Joubert family, they are not as a body tied to the firm, except as far as kindly association and a sense of their own interest may bind them. In this establishment, as in that of Messrs. Hoyle, a certain number of the shares is set apart to be purchased by such of the workmen as choose this in-

vestment, and a large proportion of the stock is held by the employés on special conditions, excluding them from any right to interfere in the management; but the participating workman who chooses to make provision for old age in the ordinary way invests his money in the local aid societies which exist in the department of Charente quite independent of the firm. If, therefore, he is not fortunate enough to be a workman shareholder, he has the option to improve his position elsewhere, should the opportunity arise, without losing any advantage his providence may have secured by the investment of the dividends on his wages. His liberty of action is complete. The sums paid in cash to employés amounted from 1882 to 1884 to £7,463 a year, dividends on wages being from 6 to 11 per cent. During the 10 years from 1879 to 1888, inclusive, £44,880 were paid in dividend on wages.

Among all the founders of profit-sharing the labors of M. Leclaire, house painter and decorator of Paris, have been the most celebrated, not only for the results, but for the wisdom with which the various methods have been applied. This famous establishment in its present development combines at once the cash payment in a very extended application, the provident fund, and the stock system.

Leclaire began by paying extra wages to good workmen. He then gave bonuses to a few, and next he gathered the best of his work people into a provident society. This was as early as 1838. Two years afterwards he tried to feel his way towards a distribution of profits, maintaining that the sum distributed would be fully supplied by the increase in the profits consequent on the new system. Meanwhile he raised wages and reduced the length of the day's work. In February, 1842, he pledged himself to divide a portion of the profits of the coming year among a certain number of the workmen, members of the friendly society. This society, as originally constituted, was a kind of tontine. It tested in the first instance the self-denial of the workmen, who could postpone an immediate expenditure for a future profit, and the influence of M. Leclaire ultimately converted it into the more healthy form of a benefit society, providing pension for old age. In all these early stages we find him working to attain the first condition of success in these schemes—the confidence of his employés.

In the following February M. Leclaire presented £490 as the sum to be distributed among the 44 workmen who participated. In 1847 the number of workmen admitted had more than doubled, and the sum available for distribution had risen from £490 to over £800. There was an annual average distribution among the workmen of over £750, with the result of an average distribution to each workman of over £9 a head.

According to the present organization of the Leclaire firm, 5 per cent. on the capital of 400,000 francs is deducted, like wages, from the gross profits, in order to find the net profits. Of these, 50 per cent. goes as reward to labor in cash, 25 per cent. as a reward to management, and 25 per cent. to a great provident society, which by the liberality of M. Leclaire has become half owner of the capital of the firm.

M. Leclaire continued his labors and in subsequent years carried the principle of a cash dividend on wages so far that since 1870 any workman called in for a single day will have to his credit at the end of the year some addition to his pay (M. Marquot). It is not within the scope of this report to discuss his various plans for raising the moral and intellectual character of his employés. We may judge his work by the test which he would have himself preferred—the amount of additional cash profit which has accrued to labor.

In 1870 the number of participants was 758, and the dividend on labor £2,465, or 14 per cent. on annual wages. The business of the firm advanced rapidly in the following years, and in 1884 824 workmen shared in a distribution of £9,200, or nearly 24 per cent. on their wages. In subsequent years this house has suffered from the bad times and the profits have not been so high, but in 1889, M. Redouly informs me, the dividend in wages paid in cash was £9,120. To his courtesy I am indebted for the table of profits to a recent date given in Appendix C.

During the 10 years from 1875 to 1884 the profits of the firm and the percentage to labor advanced without interruption; 1,718,250 francs were paid away in cash, but at the same time 859,125 francs went to the coffers of the great association, who are practically joint owners with M. Redouly and his partner, and would be so much capital available if required to meet

emergencies in the less prosperous times which followed upon 1884. We have thus in the Leclaire system, even in its most highly developed form in favor of the direct payment to labor, an indirect combination with the shareholding system.

There can be no doubt of the practical success which profit-sharing has attained in this particular case, and for establishments of a like nature the history of this firm has many lessons. Professor Böhmert, however, suggests many considerations which should warn us not to draw too wide conclusions from M. Leclaire's great achievements. The business of the house is chiefly hand work. The goods required, such as colors and brushes, are hardly one-fifth of the outlay; the other four-fifths all goes in wages. The staff is engaged in groups of 8 or 10 at some sixty or eighty different places. On the other hand, Leclaire was at a great disadvantage over the larger establishments already referred to in the fact of a long, slack season. Nearly a third of the people who benefit by the dividend on wages are only employed during the summer and have many years to wait in order to become members of the permanent staff. Even with these work people, M. Redouly tells me, the system has excellent results. They find winter employment more readily and return to work at the right season.

One of the reasons why his work is specially valued by the world at large is that, while animated by a generous spirit of benevolence, he never forgot the teachings of practical business. He declined to follow his philanthropic impulse until careful observation had assured him of a practical result. We have, consequently, in the history of his firm the best illustration of what may be done under certain conditions to promote coöperation between employers and employés. What these conditions were in the case of this particular firm must, however, be kept in mind. There was first of all the great personality of M. Leclaire; there was next the large proportion which labor contributed to the cost of the outturn of the business.

Whilst this report was going through the press, M. Marquot, M. Leclaire's old secretary, passed away, and in supplying his place in the management M. Redouly, the surviving partner, has obtained the consent of his colleagues to double the capital engaged, he and the benefit society each doubling their stake in the business and the other 25 per cent. of the capital engaged being supplied by two new partners instead of one. The total capital thus amounts to £32,000, with three managing directors. Whilst provision is thus made for the extending business of the firm, the principles laid down by the founder as regards the division of profits between capital or labor are strictly maintained.

Among the early and successful followers of M. Leclaire should be mentioned M. Goffinon, whose labors are now represented by the firm of Barbas, Tassart & Balas, plumbers and sanitary engineers. They employ about 150 people, and 5 per cent. of the net profits are allotted to all the employés. This has resulted in recent years in a dividend of 5 per cent. on the wages. One-half is paid in cash and the other goes to a provident fund. After this system had been in operation some time, M. Goffinon followed it up by establishing a rule imitated in many of the later English examples of profit-sharing—an expert accountant is called in to certify whether the scheme of profit-sharing has been carried out according to the plan announced.

Important in the history of this movement is the experience of the great publishing establishment of M. Chaix. There profit-sharing was brought into operation in 1872, and between then and 1890, M. Robert tells us, over £36,000 were distributed in dividend on labor. The rules of this establishment are simpler than those observed in many other French firms and contain many provisions remarkable for judgment and equity. The main portion of them is reprinted in Appendix B to this report.

These are but a few illustrations of successful profit-sharing systems in the native home of the theory, and, when these schemes are considered in connection with the great manufacturing industries of England and we see that in France profit-sharing has resulted in a dividend on wages paid amounting in recent years to between 20 and 24 per cent., the question will arise how far the systems which have shown such results in the paper mills of Laroche-Joubert, in the house-painting firm of Leclaire, in the printing establishment of Chaix, are available in our larger forms of industrial enterprise—our mines, our foundries, our cotton and wool factories.

RECENT ENGLISH SCHEMES.

In the English profit-sharing schemes of later date something in the form (*d*'), a cash payment such as Messrs. Briggs provided, has generally been recognized as necessary to interest the workers in the plan. In the case of Messrs. Bushill, of Coventry, printers and stationers, a definite share of the profits, fixed for 3 years at a time, and termed the reserve limit, is stated to an actuary, this sum being appointed as sufficient to cover the remuneration of capital and of management, and the remainder of the net profits is distributed among the workers in proportion to the amount of their wages during the year. Of the dividend due to each worker, one-third part is paid in cash, whilst two-thirds is carried to his credit in a provident fund. If, however, this dividend exceeds 6 weeks' wages, the excess is carried to an employés' reserve fund, remaining in the hands of the firm at the rate of 4 per cent. interest. This fund in bad years may be applied towards the dividend, or, if it accumulates for 5 years, it is allotted to the provident funds connected with the establishment. Two years have elapsed since the scheme came into operation, and in each year a dividend, amounting to 6 weeks' wages to each hand, has been declared. In September last a further sum, amounting to 5 days' wages for each participant, was carried to the employés' reserve fund.

Messrs. Joyner & Co., chandelier manufacturers, of Birmingham, have recently adopted a system like Mr. Bushill's. There is a reserve limit; the balance of profits is paid partly in cash, partly to a provident fund.

In the case of Messrs. Hazell, Watson & Viney (limited), of London, we have another firm who have made a cash payment an essential feature of their scheme, and who, like Messrs. Bushill, have the enormous advantage over the proprietors of the Whitwood collieries, that they have hitherto enjoyed most amicable relations with their people. In many respects the efforts of the firm for the comfort and well-being of their employés recall the ambitious scheme of the Familistère, at Guise. The net profits, after provision for additions to the reserve fund and for a 10 per cent. dividend on capital, are allotted—50 per cent. as an additional profit to capital and 50 per cent. as a dividend on labor. Half of this labor share, or 25 per cent. of the whole, goes as a cash payment to each employé 3 years in the service of the firm, whilst the other 25 per cent. is paid to his credit in a provident fund. The trustees of this fund pay out of its revenue in every year such death and other claims as may arise and credit the residue of such revenue to the members respectively in proportion to their wages for the time being. This labor dividend has amounted for each of the last 2 years to £605 5s. 6d., and the firm are of opinion that the arrangement has substantially contributed to maintain satisfactory relations between them and their work people. They have followed this arrangement up by providing for the purchase of shares by work people, but this is to be in addition to, not in substitution for, the labor dividend. Mr. Hazell said in 1889: "They did not pretend that the concern was a philanthropic institution. It was a business institution, carried on for business purposes; but they tried to act so that there should be no ill feeling between employer and employed, but thorough and complete heartiness and concord. They wanted all to have an abiding interest in the firm."

Messrs. Blundell, Spence & Co. (limited), of London and Hull, have applied the cash system for some years. After deductions for 5 per cent. interest on capital and for depreciation, 10 per cent. of the remaining profits constitutes a gratuity fund. One-fifth of this, or 2 per cent. of the ascertained profits, goes to the office staff; the other four-fifths, or 8 per cent. of the profits, goes as a dividend on wages. In March, 1890, this 10 per cent. amounted to £1,284 16s. and the 310 workmen participating received among them £1,035 13s. 2d.

Another case is that of Messrs. Goodall & Suddick, stationers, of Leeds. They employ about 300 persons, all of whom, if at work for 12 months, share in 18 per cent. of the net profits. These profits are ascertained after deduction of 5 per cent. on capital and 5 per cent. for depreciation. Of the net profits, 82 per cent. goes as additional remuneration to capital and 18 per cent. as a percentage payable on wages and salaries earned during the the calendar year. Of this labor fund, two-thirds goes to the heads of departments and one-third to the work people, payable in cash.

Among other recent followers of this system about whom information has been obtained may be mentioned the following:

Messrs. Rowntree, drapers, of Scarborough, have adopted a scheme of profit-sharing under which 98 of their staff participate partly in cash, partly in contributions to a provident fund. One-fifth of the net profits is set aside as an additional remuneration to labor and paid in cash. During the first experimental year the result was $1\frac{1}{2}$ weeks' wages to each participant. One of the rules provides: "If the firm should put an end to the scheme, the provident funds of all the employes will become payable to them on the 31st of March following."

Messrs. W. D. & H. O. Wills, of Bristol, have recently applied profit-sharing in their tobacco factories, with the result that they paid in 1889 $11\frac{1}{4}$ per cent. on the wages or salary of the year to about 1,000 employes.

Among their rules is the following:

"This is not to constitute a legal contract, or to give any right of examining our accounts or of knowing the rate of percentage set apart by us. * * * At the same time all parties may understand that (unless in the case of a mutual termination of existing arrangements) no change will be made by us in this respect without 6 months' notice, expiring on the 31st of December, so as to secure the bonus for all who worked in anticipation of it; and our auditors shall each year certify the sum to be set apart according to the percentage fixed by us."

The Southwark and Deptford Tramway Company, with over 100 employes, have adopted rules, of which article 5 provides: "A bonus will be given to the staff depending upon the result of the half-year's working as shown by the company's published accounts, as, for instance, when the company earns sufficient profit to show a dividend of 5 per cent., the men would receive 6d. in the £1 on the amount of their wages for the half year, or 1s. for the whole year, or, in other words, for every £1 profit earned by the company 1s. would be distributed amongst the employes. Thus, if the company earns £5,000 profit in the year, the amount payable to the staff would be £250." Thus, when the company pays 5 per cent. on capital, a man earning 4s. 6d. a day would receive £4 2s. at the end of the year, or about $11\frac{1}{2}$ days' wages.

Messrs. Arrowsmith, publishers, of Bristol, have adopted a system based partly on amount of wages, partly on length of service. On this plan most of their work people received for 1889 a cash dividend amounting to about 3 weeks' wages.

A celebrated recent instance of profit-sharing is that of the South Metropolitan Gas Company last year. The workmen number about 3,500 during the winter season, the permanent staff being about 2,000. The company proposed that, if the men would sign an agreement to continue in its employment for 3 months or longer, every workman who so signed should become entitled to a percentage on his wages, regulated by the price charged for gas, on the sliding scale. By this scale the company is entitled to pay its shareholders a dividend of 10 per cent. when the price of gas is not above 3s. 6d., and the shareholders may be paid an additional dividend of one-fourth of 1 per cent. for each reduction of 1d. per 1,000 feet. The price of gas has been for some time 2s. 3d., but the workmen were offered 1 per cent. on their wages for every penny reduction below 2s. 8d. per 1,000 feet. Thus the men who have signed these agreements gain 5 per cent. on their wages.

Last June, when the first division took place, some 1,500 men earning weekly wages had qualified themselves to take advantage of the scheme, and the result was an additional payment to labor amounting to £5,377 8s. 7d., whilst nearly £3,000 have been voluntarily deposited with the firm at interest. Since June nearly the whole number of men have come in for longer or shorter periods, according as they are on the permanent staff or engaged for the winter.

It may be contended that this offer is rather a liberality of the company than profit-sharing properly so called, but the conditions affecting the cost of gas alter from time to time, as, for instance, the price of coal, which has recently risen. If by this arrangement the company succeeds in avoiding or deferring an increase in price of gas, they will at once be able to secure some advantage from the system, and Mr. Livesey, the chairman, thinks there are many signs

of such a result. There is greater diligence, suggestions for economizing expense are from time to time made by the men, and a new interest is shown in the work. There are results which, in his opinion, no mere skill in superintendence could bring about. In the appendixes will be found the text of the rules and the figures showing the working of the scheme to the present time.

A London firm engaged in the confectionery trade and paying over £30,000 in wages has this year adopted a very direct plan of profit-sharing. The net profits, after a dividend at 6 per cent. on the ordinary shares of the company, are divided into two parts, of which one is to go to the ordinary shareholders in augmentation of dividend; the other is to be a percentage on wages and salaries paid. All the recipients of wages and salaries who on the 31st of December last had been 1 year in the employment of the company shall receive this percentage in cash. The wages percentage accruing to persons not so qualified shall be invested in shares of the company, these shares to be set apart to form a provident and sick fund for the benefit of all persons in the employment of the firm. In this instance the managing director has dispensed with some of the preliminary steps adopted in other cases, such as the formation of a special grade among the employés equivalent to the "noyau" of M. Leclaire; but Messrs. Clarke, Nickolls & Coombs have this great advantage in their attempt, that they have long had the pleasantest relations with all their work people. Relying on this happy state of things, the management have confidently adopted one of the most liberal of the proposals of this kind yet made. The manager states: "Under this scheme capital will be allowed a fair, but not exorbitant, return, and the employed, untrammelled by any exacting regulations (for they will still be at perfect liberty as heretofore to join or belong to any society or trades union, with the full and free consent of the directors), will be paid, as heretofore, wages at least equal generally to those current in similar establishments."

The manager continues: "In the development of the scheme it will become not only the duty, but the interest, of the present managers to train up a disciplined body of workers, from amongst whom may be appointed substitutes to take the place of those who in due course must retire from their present posts in the management. It will be a work of time, but each succeeding year should find the process of evolution more rapid. To a great extent the rate of development will be in the hands of the work people. It will not be amiss to bear in mind that the present managing directors have themselves been workmen, and that it is hardly 20 years since the writer entered the service of the founders of the business as a laborer."

Many other cases might be quoted, both in France, England, and America, where employers in every variety of business have recently adopted this principle under various modifications, but I have thought it better to take certain typical illustrations rather than to seek to make this report a record of all known applications of the system.

IMPORTANCE OF CASH PAYMENT.

A variety of examples seems to show that, if the profit-sharing system is to attract the best energies of large masses of work people, it ought sooner or later to include a payment in cash. In the Godin system a right to share capital has been substituted for cash payments, but there the training of the work people has gone on during a long series of years. The people have grown up to feel a direct interest in the commercial success of the company, and from the point of view of commercial enterprise there is much to be said in favor of capitalizing the share of labor, supposing the laborer is sufficiently farseeing and intelligent to find the same stimulus in an accumulating property that he does in the direct receipt of cash.

When the whole dividend to labor is paid away in cash, and thus during the good years a considerable portion of capital disappears among the workmen, in bad years the capitalist employer has sometimes to go even without his 5 per cent. It is only a partial answer to this to say that the workman has his share of the loss too. On the supposition that he works as resolutely and contentedly during one or two bad years as he did at the end of a series of good years, he loses all fruit of his extra exertion, energy, and intelligence, whilst the loss to capital is *pro tanto* reduced. But the supposition on which this answer is founded is only

applicable to workmen of a very high order of intelligence, who are thoroughly trained in the profit-sharing system, have perfect confidence in its working, and are resolved to stand by their employer in carrying it out to the end; and, even so, it is not clear that the capitalist employer is sure to be in as good a position to meet a series of bad years as if he had retained command of all the profits made. Even if the whole share of profits paid to the workman has been actually created by the stimulus given by the profit-sharing system or could not have existed without that system, the profit-sharing employer has not the same amount of resources to carry a largely extended business through a bad time. There is an obvious reasonableness in the systems which provide for a portion, at least, of the profits to the workman remaining in the business in the shape of shares or of money lent the firm in his name.

In most instances, where profit-sharing is in effective operation, it will be found that the reward to labor comes partly in cash and partly in a deferred right to pension or property, and, where holding the property is closely connected with actual work in the business, this is as reasonable a mode of rewarding labor as any other.

EVIDENCE AS TO ECONOMIC RESULTS.

As to the results, beyond the fact that the three great French firms so often named, Lacleire, Godin, Laroche-Joubert, have built up large fortunes, we have the evidence of all these men attributing their success to the operation of this scheme. The fortune of the Bon Marché at Paris was, according to M. Boucicaut, consolidated by the bonus form of profit-sharing, which he so liberally applied for many years.

M. Barbaret asked M. Godin what is the result from an industrial point of view.

M. Godin: "Facts will tell you more than any panegyrics. Ever since this system was established, the workmen are interested in improving the output. They are quick in pointing out sources of loss and defects, and they exert themselves to make new suggestions."

M. Goffinon shows the economy resulting from profit-sharing by these figures: "Formerly the wear and loss of cordage, ladders, and soldering irons were reckoned at 8,000 to 10,000 francs per year; now we need allow but 5,000 francs. There is an equal economy of material used."

M. Laroche-Joubert is equally explicit as to the improvement in the work done and the reduction in cost.

On the advantages resulting from profit-sharing, even in a brief experience at the South Metropolitan Gas Works, Mr. Frank Livesey writes:

"One decided advantage to the company from the working of the profit-sharing scheme has been the desire on the men's part to see that the sick fund is managed better, that is, to see that the company is not imposed upon. Formerly it was of no consequence to the men, who pay 3*d.* per week to this fund, which is not sufficient to pay the 12*s.* per week they receive during sickness, so that the company makes good the deficiency, whatever that may be.

"Another case is that of a foreman managing the coke business, who suggested that if arrangements could be made for quickly loading the costermongers' barrows with coke a much larger trade could be done.

"Another illustration is that of saving wear and tear of iron barrows. These barrows, when loaded with hot coke, have to be turned upside down to empty them, and in so doing the barrows are much knocked about. The plan now used saves the shaking and destruction of the barrow, with less labor for the men. Several men have pointed out cases where work that was being done outside could be done cheaper by the company."

Some 8 years ago Messrs. Brooke, Bond & Co., tea-blenders, of London, established a bonus system for their employes in service more than 6 months, and, writing in December, they express their satisfaction at the result:

"The number participating varies. So does the amount of net profits. Consequently, the ratio between normal wages and the sum allotted to each worker fluctuates considerably. We have distributed a bonus at the rate of 1*s.* 8¼*d.* per £1 of wages and a bonus of 2*s.*

11½*d.* per pound of wages. The smallest amount distributed has been equal to 8½ per cent. on the assistant's earnings, and the largest has been equal to nearly 15 per cent.

"In the event of a worker leaving of his own accord or because his services are not required, and in the absence of any culpable negligence or misconduct, he is paid his share of profits up to the date of leaving, on the basis of the previous half-year's percentage.

"Our staff embraces both time and piece workers and the usual mercantile clerical staff. The numbers participating were—

Year.	June.	December.
1887.....	61	69
1888.....	84	87
1889.....	98	101
1890.....	110	.....

1 "Our system of profit-sharing was introduced primarily for the benefit of the workers. The problem was how to add to the earnings of labor without diminution of the profits of the employer. The solution was supposed to be found in increased zeal, vigilance, punctuality, economies of time and material, identification of interests. It was hoped and anticipated that the operation of these motives and qualities would add to the profits all that is given back in the shape of bonus. We are completely satisfied with the results.

"As you see, our hands enjoy a substantial bonus. On our part we have the advantages of a better choice of hands, indisposition on our part to change, less necessity for incessant personal supervision, and greater amenity and agreeableness in the relations of masters and servants."

All the French authorities are agreed there is a greater permanence in the staff.

As to the source of profit No. 3, suggested by many observations of M. Leclaire and quoted from Mr. Pirrie, of Dundee—the reduction in cost of superintendence—I found M. Dequenue very doubtful of its reality. He said the superintending staff was much what would be required in an ordinary establishment, but M. Laroche-Joubert put the matter in a new light. He agreed with M. Dequenue that a superintending staff is as much required as ever, but said its effectiveness is enormously increased. There is less friction. A remark from the foreman ceases to be a censure. It is an admonition to the workman in his own interest. Instead of causing a wrangle, it is received with brisk attention and sometimes with satisfaction, as a reminder that the workman has an opportunity of contributing to the general efficiency. If these observations are correct, No. 3 should be rather described as greater effectiveness of superintendence.

PROFIT-SHARING IN AGRICULTURE.

There are many ancient forms of coöperation for a share of profits in farming, in fishing, in market gardening. An interesting account of this latter system, as now at work in Bulgaria, is given in Mr. Blech's report for 1890.

Groups of from 10 to 60 men collect a capital of £300 and start together in the early spring. They hire land near some town, "sometimes as far as Brussels or St. Petersburg." The produce is grown, and some of the party are appointed salesmen. A head gardener receives all incomings, and, after expenses are provided for, "each man receives a pro rata allotment proportional to the share of working capital advanced and returns home." Over 9,500 of these native gardeners migrated northwards for the summer season of 1888.

The Massachusetts fisheries are another well-known example. But these are all, as Mr. Carroll Wright points out, cases in which the laborer stakes his chance of wages on the result of the enterprise. They are agricultural or fishery partnerships, so to speak, rather than instances of profit-sharing in the sense considered in this paper.

The application of profit-sharing to agriculture has taken many forms, with which this report is not concerned. The old Metayer system resembled some of the forms of coöperative

workshop. One man gave the land and another brought the labor and intelligence, and the profits were shared; but there the profits came in lieu of salary or wages.

Students of this question will be familiar with the celebrated experiment in agricultural profit-sharing by Mr. Vandeleur, of Ralahine, many years ago; a detailed account will be found in Mr. Taylor's book, pp. 100-108. A recent example shows that the present revival of public interest in profit-sharing schemes has extended to agriculture. Mr. George Holloway, M. P., has adopted on his estate on the Cotswolds a scheme having some points of resemblance to the share system at Guise. The estate is of 1,000 acres. It is tithe free, and the rent is 7s. 6d. per acre, or £375 per year. The live and dead stock, acts of husbandry, etc., on the estate are fixed by valuation at £5,000, and on this amount the estate is debited with 5 per cent. interest, raising the rent to about 12s. 6d. per acre, or £625 per year. Mr. Holloway undertakes to pay his agent the present salary and the workmen the current rate of wages. If a profit of 5 per cent. per acre is made, every man earning, for instance, wages amounting to £50 is to be credited with a sum in addition of £12 10s., and on this sum he will receive interest at the rate of 5 per cent.; this sum, accumulating each year, goes to pay off the £5,000 advanced to stock the estate. As soon as this is cleared off, all future profits will go to the work people in cash, to be distributed according to the contribution each of them has made in clearing off the original outlay, Mr. Holloway only receiving his rent of £375. The rules under which this interesting scheme is being carried out will be found in Appendix B.

COÖPERATIVE WORKSHOPS.

The use of language in relation to these questions is so unsettled that it may probably be useful to refer briefly to some commercial and economic schemes in this country and abroad which are often associated in the public mind with profit-sharing as developed in France. There are many interesting cases of workmen combining together to start a business on profit-sharing principles, such as the Hebden Bridge Company, the Eccles Manufacturing Company, the Airedale Worsted Company, and others. Although, whatever the workman capitalist may be in the future, he is not likely for some time to take the place of, or to prove a formidable rival to, the large capitalist properly so called (and the immediate question is, how far profit-sharing may be useful to a community consisting of owners of capital on the one hand and sellers of labor on the other), societies of this description deserve notice here on many grounds. So far as they pay a dividend on labor or credit the workman with such a dividend, they are profit-sharing establishments, and come within the scope of this inquiry; but the stimulus to the nervous energy of the workman does not depend merely on this dividend to labor. In theory each workman is also a shareholder. The shares are generally of a small amount, such as a saving workman might be able to command. In many of the best examples of the theory they can only belong to workers in the shop or factory, and are not transferable except to such workers, and there is a maximum number of shares which no one workman can exceed. The management of the business is in the hands of a committee and officers elected by the shareholder workmen.

The Eccles Manufacturing Society has been in existence now close upon 30 years. The shares are £1 shares, but each member must hold five at least and can not hold more than two hundred. The object of the society is declared to be to carry on in common the trade of spinning, weaving, etc., but the shares may be held by anyone admitted at a meeting of the society, whether a workman or not. The profits of the society are chargeable in the first instance with interest on the A shares at $7\frac{1}{2}$ per cent. and on the B shares at 5 per cent. As regards the net profits remaining, the capital of the A and B shares and the total amount of wages paid during the preceding half year shall be added together, and the balance of profit shall be equally divided on both capital and wages at so much in the pound as such sums will make. The portion, however, accruing to wages in each case will only be paid to workmen being members of the society or willing to become members. At present the number of members is 299.

In England these enterprises have generally consisted of a small number of workmen shareholders, and, however excellent the work may be, the smallness of their capital puts them at a disadvantage in competition with the capitalist employer. In Lancashire especially, where they came into existence contemporaneously with the movement for coöperative distribution, which has had a great success, owing to giving a share of the profit to custom, several of these associations have grown out of their original form, the shares being transferable to anyone, whether a workman or not. Many of them differ, in fact, from an ordinary business divided into shares only by the smallness of the separate shares.

Of late years the great object of these associations has been to cement and develop their connection with the successful distributing bodies, known as coöperative stores. They hope thus to secure constant employment for their workmen and that ready market for their goods which the capitalist employer has to seek at the expense of travelers and advertisements. At all the recent congresses of the coöperative associations much has been said of the duty of the great distributing bodies towards coöperative production. These bodies have, however, hitherto abstained from giving any pledge to give a preference in the selection of goods to the coöperative workshop.

It has been urged, too, that the capital of the successful distributive associations might well be employed in supplementing the limited resources of the coöperative workshop. The whole position of these bodies and their relation to the more successful distributing associations will be found discussed in an interesting address by Professor Marshall to the coöperative congress at Ipswich in 1888:

"The energies of productive coöperation," he said, "should be guided toward those industries that do not require rare talents, towards industries in which punctuality and order and neatness and careful economy in matters of detail and a steady, resolute tread along a well-beaten path are the things chiefly wanted."

The obvious difficulty these bodies labor under in an age when the increase of machinery and the remoteness of markets give such advantages to production on a large scale has in foreign countries suggested various expedients, which, on historical grounds, may be deserving of a brief notice.

France.—In Mr. Egerton's report to the foreign office on coöperation in France he relates some results of the French scheme of 1848, which is sometimes confounded with the more celebrated one for Ateliers Nationaux.

On July 5 the Chamber, "desirous of encouraging the spirit of coöperation without prejudice to the liberty of contracts," voted 3,000,000 francs "for division amongst coöperative associations spontaneously formed either between workmen or masters and workmen."

"ARTICLE 2. The amount of this credit will be advanced as a loan in accordance with the opinion of a council of encouragement formed by the minister and with the conditions laid down by this council. * * * Requests for loans came in from all sides; five hundred such were received the first year. Ten times the amount of the 3,000,000 francs voted would not have satisfied them."

A very large portion of the funds went to employers of labor in want of temporary assistance, and the conditions of coöperation were not always adhered to. There were many disputes as to the fairness of the proportions given to particular trades or localities.

"Roughly speaking," says Mr. Egerton, "about half the money lent by the State was lost. The general cause was want of good faith in the first instance or some radical defect in the original constitution of the association."

Besides the associations started by the Government, many others sprang into existence in 1848, and while many failed others had a successful career. Mr. Egerton gives seven examples of prosperous enterprises of this kind, and adds:

"It has been found by experience that coöperative associations on a large scale are difficult to start. When once by the energy and discipline of a few an association has been put in action, then it may be possible to admit numerous members; but really good men are required at first. Besides, it is difficult to find the means necessary to begin coöperation on a large scale unless in the case of some large contract or Government work.

"The very strict obedience to regulations enacted and enforced and their discipline—greater far than could be obtained by masters—are considered to be in great measure the cause of the success of these coöperative societies."

On this point, the possible advantage which profit-sharing work in one form or another might derive from the command of capital, the evidence of M. Corton before the commission appointed by M. Waldeck Rousseau is worthy of notice: "It is not want of credit to obtain capital to start coöperation, but the qualities necessary to coöperation which are mainly wanting; hence the progress of coöperation is slow. The spirit of distrust and the jealousy of any superiority shown by the average workmen are the main obstacles."

Germany.—From the German report we learn that hitherto the general history of productive associations in Germany seems to have been pretty nearly the following:

"A not very large number of workmen join together to establish a common workshop and sell their products for common account. The original intention of admitting new working members is frustrated by the fact that, whereas an individual capitalist can increase or diminish the number of his hands according to the requirements of the market, every unfavorable conjuncture has the effect, in a coöperative association, of leaving some of the members not fully occupied. When better times come, the admission of new members is looked on with disfavor, because it only renders the position of the others worse if times of depression return. There is, further, the difficulty that the advantages shared by the new members are the result of sacrifices on the part of the old, for which the latter are not indemnified."

Whether this reasoning, reported by Mr. Corbett, be just or not, we have plenty of evidence that it is acted on by those associations which in times of prosperity prefer to have other workmen for wages rather than admit them to the benefits of membership.

As regards Prussia in particular, Mr. Corbett stated that in 1876, of four hundred and thirty-nine cases in which the employés shared in the profits, most were examples of profit-sharing with foremen and overseers.

In connection with Herr Borchert's celebrated attempt at profit-sharing in Berlin, it is worth while to recall the following passage from a German paper, the *Arbeiterfreund*, in 1882: "The surprising rapidity with which the political constitution of the German Empire was established by means of eminent diplomatic and military achievements on the part of the State makes men believe that the well-being of the people might likewise be secured far more speedily from above, *i. e.*, by the instrumentality of the intellectual and material forces at the disposal of the Government, than has hitherto been deemed possible."

In France, however, we see that these schemes have been developed generally in connection with great political eras. Profit-sharing took root in Paris about 1848. It received a further development in 1870. At both periods it was accompanied by various projects of social amelioration, such as productive coöperation and State organization of labor, but its progress appears to have been due to the inherent merits of the scheme, as adapted, at least, to the wants of the French workman. Most of the other social schemes accompanying these successive stages of profit-sharing have passed away, but the firms which have applied the more modest teaching of M. Leclaire go on and flourish.

Those who are anxious to consider this question on all sides will find a very interesting chapter in Professor Böhmert's work, in which he collects the various opinions of French, German, and Swiss authorities against the theory of profit-sharing.

The main objections of M. Leroy-Beaulieu and of M. Block are that the system of profit-sharing will encourage the aggression of labor on capital; will suggest new and mischievous ideas. One of Herr Böhmert's Swiss critics was apprehensive that in bad times the workmen would come to think their employer was not a good trader; would be too impatient, in fact, of the changes of the markets, and would leave him to himself. Thus the antagonism between employer and employed would be imbibed by imputations of incompetence. Again, many objections are based on the supposition that profit-sharing might be demanded as a legal right, etc., were it once encouraged by practical men. The system which invites the workman to save by offering him the right to purchase small shares in the firm or by guarantying him good

interest on deposits is objected to as involving small capital in unwise risks. Commerce is too risky for a wise man to employ small savings in it. But the first question is in most cases, how the workman may be induced to acquire something which he can risk—something saved from improvidence; and in most of the schemes, as they are now applied, the right of the workman to change his investment is fully secured to him.

Herr Weigert is practical when he reminds us that the results of the system must be very different in industries like that of Leclaire, where labor makes 80 per cent. of the cost, and in diamond-cutting, where it is only a fraction per cent. of the whole.

Another objection is that profit-sharing will overstimulate the workmen. They will become so absorbed in the pursuit of an additional percentage that they will exert themselves to excess.

The danger of crippling the master's authority is specially dwelt upon. To all these critics M. Marquot and M. Laroche-Joubert were able to say with some effect: "You speak from theory, I from experience; I have tried it, and you have not."

RISKS FROM PUBLICITY.

Very respectable objections have been founded, from the capitalist point of view, on the publicity which profit-sharing might give to the results of a particular business. It is said, if a firm is known to be able to pay 23 per cent. out of profits as extra pay to wages, as the Leclaire firm did for a number of years, there would be a rush of unemployed capital into this particular line of business, and excess of competition would ruin the trade. If, however, we extend our view beyond the speculator on the stock exchange, it seems very doubtful whether this objection is substantial. In the first place, proprietors of capital in the larger sense have many sources of information. They know pretty well the prospects of a particular business without waiting for a declaration of profits, and, if they have not got the information already, they are not likely to rush hastily into a new commercial enterprise because some firm has declared a high dividend.

Another ground on which this publicity, it is argued, may produce mischief is that the share of profit necessarily due to the rare quality of commercial intelligence will, when shown in figures, seem too large to the manual laborer. Instead of peace there will be discontent and agitation. The argument practically comes to this, that the truth is dangerous, and on this subject the great founders of the theory in France have always urged the importance of bringing the real facts before their people. To educate the workman in a due estimate of the value of the directing intelligence is one of the good results they expect from their system. They have from the commencement asserted the value of brain labor—its right to a proportionate share with manual labor. M. Robert says in his report: "When these sums are allotted to a man really engaged in the business—not a sleeping partner, but applying, as head of the establishment, the fullest powers of authority—there is nothing singular or unjust in giving him openly that large share of the profits which is due to a directing intelligence, to capacity, to serious thought, to commercial enterprise, to that absorbing responsibility which weighs upon a man exposed to the danger of losing, instead of increasing, the commercial capital intrusted to his care."

M. Lemaire has raised a more formidable objection. He sees no difficulty as long as a profit-sharing house is making profits, but if a time of declining profits comes, as it has come to some firms so constituted—Messrs. Billon & Isaac, of Geneva, for example—the revelation that there are no profits to divide may, he suggests, at once affect their credit. The master will, he thinks, rather draw upon the reserve fund than confess the facts. It is, however, a question whether commercial credit in the case of serious commercial enterprises is so closely connected with large profits. Credit generally depends in this country, first, on personal character; secondly, on the reputation, not for a great volume of trade with big profits, but for large resources; and, thirdly, on good habits of business. A commercial house doing a very modest business, which is believed to be working on its own resources and to have such habits of business as enables its chiefs to know exactly where they are, will enjoy more credit

at a banker's than many more ambitious enterprises boasting phenomenal profits. M. Charles Robert declares that the want of good bookkeeping is one of the obstacles which retard the spread of profit-sharing. Where character and good bookkeeping coexist, the credit of the house will probably be able to withstand successfully the absence of extra profits.

ADMINISTRATIVE AUTHORITY.

The question of the master's authority, too, is one as regards which attention should be called to the provisions of existing schemes. To invest the workman with the legal rights of partners would be clearly impracticable in any large establishment. All those schemes which have attained any success must be regarded as speculations in extra profit, founded in the first instance on mutual confidence, the capitalist believing that the intelligent workman would thus be induced to give him help which he could not exact by any elaboration of inspection, the workman believing that the employer who had recompensed his laborers in the past with promptness and liberality would give him an ample share in the new profit. Starting on this basis, both parties are able to check the result by personal knowledge and frequent opportunities of observation. Accordingly, in all the successful examples of this system the right of the employer to discontinue the arrangement, even the voluntary character of the proposal made for any particular year, is clearly brought out. Wherever it is to be tried in connection with the larger commercial enterprises which make up the great volume of English trade, the absolute authority of the employer to deal with the workmen, irrespective of his claims in the division of profits, would appear to be indispensable; and in the successful examples we have noticed, as well as in the cases of the latest recruits to this system, we find this principle of the employer's authority uniformly guarded.

Of the Angoulême paper manufactories Mr. Egerton, in 1886, said:

"It must be observed in this Angoulême establishment that the management has the practical command of the undertaking; the graduated divisions of profits are conferred as favors, not as right. Members have no individual right to interfere in the management of the business or to examine the books, except those which give the details of the distribution of profits, and the facts already given show how a system worked on these principles has resulted in profit both to master and men."

In 1840, when M. Leclair commenced his profit-sharing scheme, he stated: "I am the master of my business." Later on he said: "The entire plan is to distribute among a certain number of my workmen who will be wise enough to deserve this advantage a part of the profits produced by labor. The rules of the house must be observed, and there must be mutual confidence." The whole scheme, in fact, existed on confidence, the absolute power of the master remaining untouched until the later stage, when the ownership of the business practically passed into the hands of a committee of the workmen.

In the same way in the profit-sharing system of M. Chaix, 1879, we have this clause:

"ARTICLE 38. M. Chaix expressly reserves to himself the power of abolishing the present regulations in the event of his not being satisfied with their results."

And article 33 had previously declared that M. Chaix is judge of all claims which may arise in reference to the present regulations.

In the case of one of the most recent followers of these teachers, Messrs. Clarke & Co., we find the following provisions:

"The participants shall possess no right whatever to intermeddle in any respect with the bookkeeping.

* * * * *

"ARTICLE 10.- It is declared that the directors are sole judges of all claims which may arise with reference to the present regulations.

"ART. 11. If at any time it be decided by the directors to abandon profit-sharing, they reserve the right to do so after reasonable notice and to divide among the employés, as they think fit, any sum standing at credit of the provident fund."

In Messrs. Bushill's scheme it is provided:

"RULE 5. The scheme is to continue in force only until the firm gives notice to the employes putting an end thereto."

Messrs. Goodall & Suddicks provide by rule 11: "The principal shall retain the entire and exclusive management of the concern, as heretofore, including the full right to take apprentices, and set on or discharge all persons employed, and to give and take notice for putting an end to the service or engagement of all such persons according to the usual regulations of the trade, and to reduce or advance the rate of wages."

Given, however, confidence in the good faith of the employer, in his trustworthiness as to the general results of the year's work—and without such confidence on the one part and the other none of these schemes have attained any permanent vitality—it is obvious that he must retain full authority to dismiss this workman or that; otherwise the work people who have entered into the scheme in good faith, applying their best energies to secure a favorable result, would not have the assistance of an efficient administration. Where this system has taken root and flourished, admirable subsidiary institutions have sprung up—committees of conciliation and other methods for abridging the labors of administration and reducing the friction between employer and employé. On this articles 27 and 28 in the Chaix rules may be compared with the Laroche-Joubert rule 44.

ABSENCE OF LEGAL OBLIGATION.

On the side of the workman it is urged, what is the use of a system which is so open to the chances of humor or caprice? Does it not necessarily follow from the power reserved to the employer that this policy is a futile dream not deserving practical consideration, and that it may be a snare for labor? We must recollect that the scheme proceeds on the supposition of a profit to both parties, both the laborer and the capitalist. Capital may fairly claim some additional profit for the conduct and organization of the new scheme, the risk and labor it involves; and, if the theory is right, the laborer has a guaranty in the self-interest of the capitalist that the project will not be lightly abandoned. Men like M. Leclaire and M. Joubert traced a large portion of their fortunes to the operation of this system. In the case of the Whitwood collieries the system was ultimately abandoned, because the employers believed the work people were too much preoccupied with the adjustment of the rate of wages amidst the fluctuations of the coal trade to make due exertions toward creating an extra profit. In the case of the Bord firm the scheme was abandoned, because the limited company who succeeded M. Bord did not share his ideas as to the proportion of the increased profit which should be assigned to labor, and we must remember that in both the Whitwood and the Bord cases the schemes continued in operation for a considerable number of years and produced very large amounts in addition to wages.

It does not therefore seem any conclusive objection to that form of coöperation which engages capitalist and laborer to seek a new source of profit that the enterprise is terminable at the will of either party. If the branch of business is of such a kind that after a patient, careful trial no appreciable extra profit can be made, then the sooner the scheme is brought to an end the better for all parties. If, on the other hand, the business has been wisely selected, experience shows that the policy of profit-sharing will not be lightly given up.

POSSIBLE RISK TO WORKMEN.

Again, whilst all the practical applications of this policy have hitherto explicitly guarded the authority of the employer, maintaining his absolute responsibility in the management, the risk of loss to the workman, where he receives a payment in cash, is exceedingly slight. He will not be deterred from joining in a trade movement to be enforced by strike, unless he believes in the good faith and intelligence of his employers. If he has such employers who offer him a profit-sharing scheme, he gets the opportunity with them which he would not get with other employers not adopting the profit-sharing system, namely, that of using to his own advantage what has been described as the "waste product" of the British workman—"the

higher abilities of many of the working classes; the latent, the undeveloped, the choked up, and wasted faculties for higher work that for lack of opportunity have come to nothing."

THE NUCLEUS, OR NOYAU.

The nucleus, or principle of selection, adopted by M. Leclaire is deserving of some examination, for, popular as his labors have been, this principle has often been objected to in France as illiberal and contrary to ideas of equality.

Assuming that a new fund comes into existence under the profit-sharing system, it is improbable that at the first start the most energetic and capable workman will, without the noyau, gain the full result of the additional nervous expenditure. He is invited to exercise a thoughtfulness in the use of material, a delicate care in the finish of his work, which the most vigilant superintendence can not exact from him as one of the conditions of his employment. These new duties will be discharged in very different ways by different workers. One man puts into his day's work a degree of intelligence and energy which may substantially contribute to the general advance in profit, whilst another of average capacity continues to do his stipulated time without any effort of will to make the outturn better. The latter thus gets an addition to his wages without deserving it, and this addition is paid for out of the increased energy of the good workmen. To guard against such injustice most profit-sharing schemes of this latter kind have started on the basis of limiting participation to a certain number of the actual workers. The test of fitness is sometimes length of service, sometimes approved efficiency. Either the advantage out of the profits is confined to a select body of the workmen or they have a larger share than the others. This selected body are relied on to spread the principle of coöperation among the workers by their example and teaching. Care, of course, must be taken in the constitution of this scheme that the other workers shall be able to find admission into the profit-sharing ranks according as their capacity and willingness to contribute to the new fund are ascertained. The door must be open, as M. Godin says, for the workmen willing to qualify, whilst in the meantime the superior workman is relieved of the idea that part of the fruits of his voluntary toil is going to the indifferent and worthless.

Leclaire started entirely on that principle of selection and worked out from it, so that at the present hour, as we have seen, a man who is only employed by the firm for a single day gets at the end of a prosperous year his addition, however minute, to his wage. The spirit of the original select body has so thoroughly permeated the whole organization that drones have either ceased to be drones or they have been got rid of. The standard of workmanship has become so high that even a man employed for 1 day would be unlikely to be admitted unless he was a workman above the average.

It may be argued that, if the principle of noyau, or nucleus, of workmen is a practical and just one, this latter development of the system is fantastic and inequitable, as far as it goes; that such a chance comer would get his natural reward in higher wages for his half day. It is certainly improbable that he would, if he had not thought of the system of profit-sharing, do anything to deserve the additional remuneration; but giving the money is useful in many ways. As regards the employing firm, it is evidence to demonstration that the right to a share of profit is not qualified or frittered away, but the absolute and fundamental basis of the establishment which every, even the smallest, contributor of labor is entitled to profit by. The manifestation of the principle on which the firm acts, the emphatic assurance to their partners in the scheme of the thoroughness with which they seek to apply it—all this contributes to its surer and more economical working and is worth some expenditure, whilst, the direct tendency of such an enterprise being to reduce the employment of casual labor to a minimum, the amount of such expenditure is necessarily a small, and probably a diminishing, quantity.

PROPORTION OF PROFITS TO BE SHARED.

On one question it is natural that the profit-sharing workman—content to leave the book-keeping and management to the employer—should seek to form some definite opinion for himself,

namely, the proportions of the extra profits which should go to labor and to capital respectively. A general rule, adopted in many recent experiments, is to divide the net profits into two parts, one to go as additional profit to capital, the other to be divided among the wage-earners. In France the plan has often been adopted of adding together the sums paid for normal interest on capital and for wages and dividing the net profit equally among the recipients of these sums. Upon this point all that seems to be clear is the urgent importance that the employer and work people should, in the first instance, come to some distinct understanding on the principle to be adopted. No general rule as to this proportion has yet been found. It may differ in every business—nay, in every department of a business—and it is only the persons engaged in a particular business who are in a position to suggest what the proper proportion is. In the great business of M. Laroche-Joubert there are seven different systems of adjusting the proportion of net profits to be paid to labor. Thus in the writing-paper mills the wage-earners only get 10 per cent., whilst in the packing department they get 35 per cent., of the net profits credited to each department. This is a matter about which general schemes would be useless. It is exactly the question which intelligent work people, on the one hand, and an enterprising employer seeking an advantage for himself and his employés would be able to settle better than anyone else. It would not, therefore, seem that, where the proper conditions for such experiments exist, the complexity which we find in such a system as that of the factories at Angoulême would be any insuperable obstacle. On the subject of the amount of testimony, in addition to general character, which profit-sharing firms may call in to disarm suspicion, it is deserving of notice that in many cases the rules of these companies provide for a certificate from a chartered accountant. In the case of Messrs. Bushill the “reserved limit” of profit due to capital is attested as a fixed quantity for 3 years by the personal authority of a chartered accountant (rule 2). A somewhat similar provision has been adopted by Messrs. Clarke, Nicholls & Co. and by Messrs. Robinson, of West Bromwich.

REGULATION OF WAGES.

It has been sometimes said, from the workman point of view, after all profit-sharing, whether the share is paid in cash or in a right to future dividends, may be only taking wages off at one end to add them on at the other. This comment seems more specious than true. The employer says in view of a chance of profit: “I will pay you a certain rate of wages, which you take, because you require wages for your own support; but, if you will do your work with extra care, my chance of profit will be greater, and, if that chance becomes a reality, I will give you a share of the profits.” Starting at the commencement of the year, he would not be prepared to burden himself with a liability to higher wages in any case, whether with or without profit, but he is quite willing to make a further contract with labor contingent on the realization of this profit.

Two important considerations remain to be noticed. The organizations of workingmen, which have obtained such great influence in recent years and might be supposed the best representation of their interests, are not advocates of profit-sharing. On the contrary, their attitude, while not affirmatively hostile, is unsympathetic. At the recent Liverpool congress the parliamentary committee, without condemning the system directly, declared “it would be difficult to consolidate organization in any body where a system of deferred pay, either in the form of perquisites or pensions, prevailed.” On this it is only necessary here to observe that, although special circumstances in the cases of the Whitwood collieries and the South Metropolitan Gas Company resulted in a competition between profit-sharing systems and the trades unions, there is no essential antagonism between the ordinary work of a union, between many of the objects which the older trades unions have pursued and the policy of profit-sharing. Profit-sharing probably diminishes the danger of strikes. To the union, however, whatever its policy may be, a strike is not a primary end, although it may sometimes be a means to that end. One of the main objects of the union is generally the regulation of current wages, and the just regulation of current wages is one of the conditions precedent to the efficient working of a profit-sharing system. In principle, therefore, there appears to be no reason why a trades

union should not find useful work in assisting to regulate the basis on which profit-sharing rests. Mr. Bushill points out that "in several recent schemes it is expressly provided that profit-sharers will be free to become or remain members of any trade or friendly society."

An obvious reflection for anyone who has pursued the history of this movement is that, widely as it has spread within the last 2 or 3 years, there are accounts of a considerable number of firms who have at one time tried profit-sharing and who are not now recorded as practicing it. Mr. Gilman gives a list of some length.

Many of these will be found due to individual accident, such as all commercial enterprises must be subject to. The father believed in the scheme, the son did not; or, again, the son retired from business, and so on. M. Laroche-Joubert tells us that one of his brothers so strongly objected to profit-sharing that he left the business and set up for himself, and, not succeeding, was glad to come back and be admitted to a partnership at Angoulême. The firm bought up his business, and the mill which without profit-sharing was a failure is now a successful profit-sharing member of the Angoulême group of factories. In other cases, as in the instance of the Whitwood collieries, too much was expected from the scheme. It is no magician's wand to bring about a change in character and habits all at once. It is no rival to, or substitute for, the operation of trades unions. Its influence is not sufficient to convert into intelligent, self-respecting workmen hundreds of men whose work is distinctly influenced by the presence of the foreman. The system requires much time and pains to produce substantial results. Godin, Leclaire, and Laroche-Joubert all tell the same story—the patience with which they gradually surmounted the distrust of the men, the length of time they had to wait before the employés applied themselves to contribute to the result.

Divested of the eloquence of advocates, the case for profit-sharing comes to this, that in a very large number of industries, where employer and employed are on terms of mutual respect, an intelligent, painstaking employer will find in this system a contrivance which, although requiring much personal care at first, will ultimately work automatically to continue and extend good relations between him and his workmen, to guard against possible mischiefs in the future, and in the long run to materially increase his own profits and his people's well-being.

The foregoing inquiry has been much aided by the work of Professor Böhmert, of Leipsic, a real treasury of information on the subject, and by the report of the French commission of 1883. Professor Böhmert's treatise has been republished at Paris with many recent additions, translated by M. Trombert. To the essays of Mr. Sedley Taylor, of Mr. David Schloss, of M. Charles Robert, of Paris, and of Mr. Gilman everyone pursuing these studies must feel his obligations. The information on profit-sharing supplied to the board of trade by Mr. Bushill and Mr. Schloss has been most useful, and to those gentlemen I am indebted for the form of the list of British profit-sharing firms printed in Appendix A and for most of the details there given. Several of the larger firms have been communicated with by the board. A number of other firms are mentioned as adopting this principle in the *Bulletin de la Participation aux Bénéfices*, vol. xii for the present year, pp. 222–228, and Mr. Gilman names some thirty-four in the United States of America.

None of these lists, however, include the largest portion of the firms which in this country practice profit-sharing in the earlier forms, such as unstipulated bonus or liberal contributions to provident funds. Although for the purposes of this inquiry the term profit-sharing has been used in the limited sense stated, there is a more abstract sense of the term pointed out by Mr. Carroll Wright: "The term profit-sharing may be applied to any arrangement whereby labor is rewarded in addition to its wages, or, in lieu of wages, by participation in the profits of the business in which it is employed. Benefits of various kinds, as insurance, schools, libraries, and beautiful surroundings, so far as maintained by employers out of their profits and enjoyed by employés as an addition to what their wages would purchase, would have to be regarded, in a strict analysis, as an indirect form of profit-sharing." And in this sense there are few large employers of labor in this country who might not claim a place in profit-sharing lists.

The number, however, of profit-sharing firms, restricted even by the tests Mr. Schloss would apply, amounts to over fifty in England alone, with over 11,000 employes, and shows a remarkable development of interest in this subject on the part of the commercial community within the last 2 years.

Appendix B contains a collection of rules, or extracts from the rules, of profit-sharing firms.

In Appendix C is given the most recent information on the financial results of three firms who have tried the system on a large scale.

In Appendix D will be found a list of printed authorities.

I can not conclude this report without expressing my special obligations to the following gentlemen, who, in personal conversation, have given me the advantage of discussing many points of practice and of hearing the results of their own experience: M. Edgard Laroche-Joubert, député de la Charente; M. Duquenne, Guise; Mr. Isaac Hoyle, M. P.; M. Redouly; M. Charles Robert, president of the French Society for the Study of Profit-Sharing; M. Fiat, Mr. W. P. Hartley; Mr. Hazell, of Messrs. Hazell, Watson, & Viney; Mr. Horn, of Messrs. Clarke, Nicholls & Co.; Mr. G. Livesey, M. Chaix; M. Dru, Bon Marché, Paris; Mr. W. F. Wood, of Messrs. Cassells & Co.; M. Trombert.

I have, etc.,

J. LOWRY WHITTLE.

PATENT OFFICE, *December 31, 1890.*

[Appendix A.]

PROFIT-SHARING FIRMS.

List of British profit-sharing firms.

[The following list is mainly founded on the figures published by Messrs. Bushill and by Mr. Schloss.]

Name of firm.	Address.	Business.	Treatment of the bonus.	Year of commencing.	No. of employes.
Coöperative Builders (limited).	Burton Road, Brixton, London, S. W.	Builders.....	Paid in shares.....	1888	114
Scotch Tweed Manufacturing Society.	Selkirk.....	Tweed manufacturers.	.....do.....	1890	80
W. Thomson & Sons (limited).	Woodhouse Mills, Huddersfield.	Woolen manufacturers.	.....do.....	1886	190
J. W. Arrowsmith.....	Quay Place, Bristol.	Printer and publisher.	Paid in cash.....	1886	53
Bailey, Nokes & Co. (limited).	Birmingham.....	Bolling mills, etc.....	.....do.....	1800	.....
Binns & Co.....	Market Place, Derby.	Corn factors and seedsmen.	Part in cash, part to provident fund.	1888	12
Blundell, Spence & Co. (limited).	Beverly Road, Hull, and London.	Color and varnish manufacturers.	Paid in cash.....	1884	330
Brooke, Bond & Co.....	17 St. Dunstan's Hill, London, E. C.	Wholesale tea blenders.	.....do.....	1882	154
Browett, Lindley & Co.	St. Simon street, Salford.	Engineers.....	.....do.....	1890	80
Burroughs, Wellcome & Co.	Snow Hill Buildings, London, E. C.	Manufacturing chemists.	.....do.....	1886	200
Thos. Bushill & Sons..	Coventry.....	Printers, manufacturing stationers, etc.	Part in cash, part to provident fund.	1888	180
Cassell & Co. (limited).	Belle Sauvage Works, London, E. C.	Printers and publishers.	To provident fund...	1878	1,100
Central Coöperative Stores (limited).	Holborn, London....	Stores.....	.....do.....	1890	.....

List of British profit-sharing firms—Continued.

Name of firm.	Address.	Business.	Treatment of the bonus.	Year of commencing.	No. of employes.
Clarke, Nicholls & Coombes (limited).	Hackney Wick, London, N. W.	Confectionery manufacturers.	Part in cash, part to provident fund.	1890	1,000
Colombo Iron Works (limited), formerly J. Walker & Co.	Colombo and Candy, Ceylon; London office, 72 Bishopsgate street, E. C.	Engineers and merchants.	To provident fund...	1888	500
Coöperative Needlewomen's Society.	34 Brook street, Holborn, London, E. C.	Needlework.....	Paid in cash.....	1880	25
Coventry Gas Fittings Co.	Hertford street, Coventry.	Gas-fitters, etc.....	Part in cash, part to provident fund.	1889	15
A. de St. Dalmas.....	40 Belgrave Gate, Leicester.	Manufacturing chemist.	Paid in cash.....	1884	18
D'Oyly & Co. (limited), formerly Decorative Coöperative Association.	405 Oxford street, London, W.	House painters, plumbers, etc.	.....	1883	.....
Drake & Gorman*.....	2 Prince's Mansions, Victoria street, London.	Electrical engineers.	Paid in cash.....	1890	70
East Anglian Fruit Preserving Co.	King's Lynn.....	Jam and confectionery manufacturers.	.....do.....	1890	16
Edinburgh Coöperative Printing Co. (limited).	Brisco Place, Edinburgh.	Printers, etc.....	To provident fund...	1886	69
A. Edmeston & Sons..	Cannon street Iron Works, Salford.	Millwrights and engineers.	Paid in cash.....	1890	45
Fletcher & Son.....	Castle Works, Norwich.	Printers and publishers.	.....	1869	200
General Service Coöperative Stores (limited).	363 Oxford street, London.	Stores.....	.....	1890	.....
Goodall & Suddick...	Cookridge street, Leeds.	Stationers and printers.	Paid in cash.....	1876	300
Thomas Hailing.....	Oxford Works, Cheltenham.	Printer.....	.....do.....	1890	9
Hazell, Watson & Viney (limited).	1 Creed Lane, London, E. C.	Printers, etc.....	Part in cash, part to provident fund.	1886	1,200
Hepburn & Co.	Hele Works, Cul-lompton, Devon.	Paper-makers.....	.....do.....	1889	170
Geo. Holloway, M. F....	Farm Hill, Stroud...	Farming Trafalgar estate.	To provident fund...	1890	.....
Hubbard's Profit-Sharing Building Business.	23 Finsbury Circus, London, E. C.	Builder.....	Paid in cash.....	1890	75
Chas. Joyner & Co....	Icknield Square, Monument Road, Birmingham.	Chandeller manufacturers.	Part in cash, part to provident fund.	1890	280
Kensington Coöperative Stores (limited).	Hammersmith Road, London, W.	Stores.....	.....	1890	300
J. H. Ladyman & Co.	King's Lynn.....	Wholesale grocers...	.....	1877	20
Lee & Hunt.....	Arkwright Works, Nottingham.	Tool manufacturers.	Paid in cash.....	1890	60
Robert Martin.....	Tower street, West Hartlepool.	Printer.....	.....do.....	1890	6
Newman & Son.....	27 Widegate street, Bishopsgate, London.	Printers and stationers.	.....do.....	1890	17
New Welsh Slate Co. (limited).	Festiniog.....	Quarry owners.....	.....	1889	260
New Zealand Farmers' Coöperative Association (limited).	Canterbury, New Zealand.	Farmers.....	.....	.....	.....
Robertson Bros.....	West Bromwich and Knottingley.	Tar-distillers.....	Part in cash, part to provident fund.	1889	209

* Profit-sharing is either indirect or partial in its application.

List of British profit-sharing firms—Continued.

Name of firm.	Address.	Business.	Treatment of the bonus.	Year of commencing.	No. of employés.
W. Rowntree & Sons..	Westborough, Scarborough.	Drapers, etc.....	Part in cash, part to provident fund.	1890	100
South Metropolitan Gas Co.*	709 Old Kent Road, London, S. E.	Gas manufacturers..	.....do.....	1889	3,000
Southwark and Deptford Tramways Co.	2 Coleman street, London, E. C.	Tramway company.	Paid in cash.....	1890	170
James Tucker (limited).	Collingdon Road, Bute Docks, Cardiff.	Millers, etc.....	.....do.....	1890	100
Waterman & Co.....	Brigatocke Road, Bristol.	Boot and shoe manufacturers.	Paid in cash.....	1887	.....
W. D. & H. O. Wills...	Bedminster, Bristol..	Tobacco manufacturers.	.....do.....	1889	1,100
Workwomen's Co-operative Association (limited).	39 Waldon street, Commercial street, London, E.	Shirt and clothing manufacturers.	.....do.....	1888	80
H. D. Young & Sons..	60 and 62 High street, Edinburgh.	Leather merchants, etc.	.....do.....	1887	14

* Profit-sharing is either indirect or partial in its application.

In addition to the above profit-sharing firms there are many other firms which give to their employés, in addition to their wages, a bonus, the amount of which is not fixed beforehand. This is sometimes called "intermediate profit-sharing." Such are: C. Fidler, Friar street, Reading, seedsman, etc.; W. P. Hartley, Aintree, Liverpool, preserve manufacturer; Christopher Thomas & Bros. (limited), Broad Plain, Bristol, soap manufacturers; Tanyes Bros., engineers, etc.

Profit-sharing firms in France.

The following list is from the Bulletin de la Participation aux Bénéfices, vol. xii, 1890:

Leclaire (Maison), entreprise de peinture, Paris, 1842; Laroche-Joubert et Cie., papeterie coopérative d'Angoulême, 1843; Comptoir de l'Industrie Linière, Paris, 1846; Deberny et Cie., fondeurs de caractères, Paris, 1848; Gaidan, banquier, Nîmes, 1848; Assurances Générales (compagnie d'), Paris, 1850; Cie. d'Assurances "Le Phénix," Paris, 1853; l'Union (cie. d'assurances, incendie et vie), Paris, 1854; la Nationale (cie. d'assurances), Paris, 1855; La France (cie. d'assurances), Paris, 1858; Canal de Suez (compagnie du), Paris, 1865; Brière Léon, imprimeur, Rouen, 1866; Renard, Villet et Bunand, teinturiers, Lyon, 1868; Société Anonyme de Tissus de Laine des Vosges, au Thillot et à Trougemont, 1870; Pernod, distillateur, Pontarlier, 1871; Roland-Gosselin, agent de change, Paris, 1871; Vernes et Cie., banquiers, Paris, 1871; Abadie et Cie., fabricants de papiers, Theil (Orne), 1872; Aubert, imprimeur, Versailles, 1872; Barbas, Tassart et Balas, couverture et plomberie, Paris, 1872; Chaix, imprimeur-éditeur, Paris, 1872; Gaget, Pérignon et Cie., plomberie et cuverie d'art, Paris, 1872; Godchaux et Cie., imprimeurs-éditeurs, Paris, 1872; Hanappier, négociant en vins, Bordeaux, 1872; l'Aigle (cie. d'assurances), Paris, 1872; Le Soleil (cie. d'assurances), Paris, 1872; Société Anonyme des Matières Colorantes et Produits Chimiques de Saint-Denis, 1872; Mame et Fils, imprimeurs-éditeurs, Tours, 1874; Masson, éditeur, Paris, 1874; Comptoir d'Escompte de Rouen, 1875; Filature d'Oissel (Seine-Inférieure), 1875; l'Urbaine (cie. d'assurances), Paris, 1875; Plassard, Morin, Fillot et Cie., ancienne maison Boucicaud (Magasins du Bon Marché), Paris, 1876; l'Abeille (cie. d'assurances), Paris, 1876; Besse-lièvre, fabricant d'indiennes, Maromme (Seine-Inférieure), 1877; Dequenue et Cie., familistère de Guise (Aisne), 1877; Sautter, Lemonnier et Cie., électriciens, Paris, 1877; Buttner-Thierry, imprimeur lithographe, Paris, 1879; Blanchisserie et Teinturerie de Thaon (Vosges), 1880; Caillard Frères, constructeurs-mécaniciens, Le Havre, 1880; Domaine de Château-Montrose (Médoc), 1880; Société de Dépôts et Comptes Courants, Paris, 1880; Société

Linière du Finistère, Landerneau, 1880; Caillette, entrepreneur de maçonnerie, Paris, 1881; Lefranc et Cie., fabricants d'encre d'imprimerie (ateliers), Paris, 1881; Piat, fondeur-mécanicien, Paris, 1881; Dognin et Cie., fabricants de tulles et dentelles, Lyon, 1882; Moutier, entrepreneur de serrurerie, Saint-Germain-en-Laye, 1882; Compagnie de Fives-Lille (Nord), 1883; Gilon, entrepreneur de surrerie, Paris, 1883; Société Anonyme des Usines de Mazières (Cher), 1883; Bourdoux et Cie., société industrielle de la Corrèze, Paris, 1884; Gounouilh, imprimeur, Bordeaux, 1884; Baille-Lemaire, fabricant de jumelles, Paris, 1885; Lecœur, entrepreneur de menuiserie, Paris, 1885; Lombart, fabricant de chocolat, Paris, 1885; Mozet et Delalonde, entrepreneurs de maçonnerie, Paris, 1885; Roux et Cie., machines à vapeur Tangye, Paris, 1885; Saunier, entrepreneur de peinture, Paris, 1885; Monduit, entrepreneur de couverture, Paris, 1886; Maison Catteau, ateliers de broderie, Paris, 1887; Montorier, imprimeur, Paris, 1887; Thuillier Frères, entrepreneurs de couverture et plomberie, Paris, 1887; La Foncière (cie. d'assurances), Paris, 1889; Boivin, fabricant de ganses pour passementeries, Paris, 1890; Broquart, fabricant de miroiterie, Bordeaux, 1890; La Providence (cie. d'assurances), Paris, 1890; Lefranc et Cie. (Maison), fabrique de couleurs, vernis et encres (Maison de Commerce), Paris, 1890; Pommery (Vve.) Fils et Cie., fabrique de vins de Champagne, Reims, 1890; Compagnie Générale Transatlantique, Paris; Ducher, fabricant d'habillements, Paris; Gillet et Fils, teinturiers en soie, Lyon; Peugeot Frères, fabricants de quincaillerie, Valentigney (Doubs); Aiquet et Cie., atelier de constructions mécaniques, Lyon; Rivoire et Carret, fabricants de pâtes alimentaires, Lyon Boulonneries de Bogny-Braux (Ardennes); Comédie-Française, Paris; Cesenier, distillateur, Paris; Fauquet (Octave), filateur, aux Câbles (Eure).

Profit-sharing firms in the United States of America.

[Extract from Mr. Gilman's book, pp. 386, 387, and 389.]

Name of firm.	Address.	Business.	Treatment of the bonus.	Year of commencing.	No. of employés.
Peace Dale Manufacturing Co.	.....	Woolens.....	Paid in cash.....	1878	450
Staat-Zeitung.....	New York.....	Newspaper.....	do.....	1880	139
The Century Co.....	do.....	Publishers.....	do.....	1881	.....
Pillsbury Mills.....	Minneapolis.....	Flour mills.....	do.....	1882	400
Nelson Co.....	St. Louis.....	Brass goods.....	do.....	1886	250
Rogers, Peet & Co....	New York.....	Clothiers.....	do.....	1886	275
Ara Cushman Co.....	Auburn.....	Boots and shoes.....	do.....	1886	650
Wardwell Needle Co..	Lake Village, N. H..	Needles.....	do.....	1886	20
W. E. Fette.....	Boston.....	Gas agency.....	do.....	1886	.....
Hofmann & Billings..	Milwaukee.....	Brass goods.....	do.....	1886	.....
Hull & Co.....	Cleveland.....	Clothiers.....	do.....	1886	50
Springfield Foundry..	Springfield.....	.....	do.....	1887	50
Rice & Griffin.....	Worcester.....	Molders.....	do.....	1887	75
Norriston Woolen Mills	Norristown.....	Woolen.....	do.....	1887	.....
Haines, Jones & Cadbury.	Philadelphia.....	Brass goods.....	do.....	1887	250
St. Louis Shovel Co...	.....	.....	do.....	1887	100
Crump Label Co.....	Mount Clair, N. J..	.....	do.....	1887	.....
Page Belting Co.....	Concord.....	.....	do.....	1887	.....
Proctor & Gamble.....	Ivorydale, Ohio.....	Soapmakers.....	do.....	1887	400
Meyer Bros.....	St. Louis.....	Wholesale druggists	do.....	1888	.....
Rand, McNally & Co.	Chicago.....	Publishers.....	Paid in stock.....	1889	600
A. Dolge.....	Dolgeville, N. Y.....	Pianos.....	To provident fund...	1886	.....
J. W. Tufts.....	Boston.....	Soda water.....	do.....	1887	400

[Appendix B.]

ARTICLES, STATUTES, AND RULES OF PROFIT-SHARING FIRMS.

MAISON LAROCHE-JOUBERT ET CIE.

Statute 22.—Participation of profits.

The chief director is authorized to continue to the managers and work people of the different counters, stores, mills, and workrooms—in a word, the whole staff of the company—the profit-sharing of net profits and to distribute amongst them the portion of the said profits as is fixed for their benefit in article 28.

This sharing of profits shall not give the individuals to whom it is granted any right as partners.

The participators shall not be under any liability to anyone in case the company is a loser.

Statute 23.—Rule of coöperation and participation.

A by-rule considered and fixed at a directors' meeting, and which is essentially modifiable, determines the conditions under which the distribution of profits is granted by article 22.

The respective stock-takings of the different mills and trading establishments of the house shall not determine, as in the past, the amount of profits attributed to each, but only the proportion in which should be distributed that portion of the profits of the society which the director in chief is authorized by article 22 to levy in favor of all the coöperatives and participators.

Statute 24.—Distribution of the profits of coöperation.

The distribution amongst the coöperatives and participators of the whole result of the 58 per cent. of the profits of the company, which is allotted to them by article 28 of the statutes, is obligatory.

But the directors, at a meeting of the board, shall always have the right of excluding from this distribution, either personally or categorically, in whole or in part, any of the coöperatives whom they may consider unworthy of it. They shall not be required to state the motives of these exclusions or reductions of the share.

The amounts left free by the application of this article shall benefit either the other coöperators of the same category, should it be a coöperative who has been deprived or personally affected, or all the other classes, should it be to a class that this present rule has been applied.

The exclusions or deductions shall help to augment the portion of those who shall not be touched by this rule, whilst the amounts retained shall never go to the profit of the company to the prejudice of the coöperatives and participators.

Statute 28.—Distribution of general profits.

Should the income exceed the outlay, the difference, which constitutes the net profit, shall be distributed as follows amongst the three elements which contribute to its production:

(1) Twenty-five per cent. to capital, of which 5 per cent. shall be carried to the credit of the ordinary or statutory reserve fund (rule 32); 20 per cent. shall be allotted to the share capital and to that of the coöperative depositors, to be distributed with a full dividend to the shareholders and half that amount of dividend to the depositors.

(2) Seventy-five per cent. to labor and intelligence, of which 6 per cent. goes to M. Edgard Larocbe-Joubert, of which 1 per cent. is as president of the council; 5 per cent. to M. Ludovic Larocbe; 6 per cent. shall be divided between the three other members of the board of directors, an equal portion to each; 58 per cent. shall be allotted to the coöperators of the different mills and warehouses in the proportion indicated by the stock book of each, as is stated in articles 23 and 24 preceding, and distributed among the said coöperatives under the conditions fixed by the rule of coöperation.

On this 58 per cent. shall also be levied the payment to customers, as long as the board of directors shall think fit to continue to their customers the enjoyment of this favor; otherwise the whole of this 58 per cent. shall be allotted to the coöperatives of production.

The amounts accruing to each of the coöperatives shall only be personally acquired by them under the conditions and delays provided for in the rule of coöperation.

Rules.

(1) The coöperatives and participators are divided into four categories :

- (a) The coöperatives of commercial labor—sale and delivery.
- (b) Coöperatives of the mills, where the paper is manufactured.
- (c) Coöperatives of the works for finishing, for packing paper.
- (d) Coöperative custom.

(2) Fifty-eight per cent of the general profits is divided among the coöperators as follows :

As long as the board retains a percentage to custom, this shall be first levied from the 58 per cent. of profit, so as to give the customers entitled a dividend equal to the 20 per cent. of gross profits given to capital.

Twenty-five per cent. of the remainder, or a quarter, goes to wages, to be distributed in pursuance of rules 12 to 14.

This first distribution in addition to wages is independent of the share which the wage-earners may obtain in the profits assigned in connection with the different branches.

Thirty-five per cent. goes to the commercial branches and sale and delivery, to be divided according to rules 3 and 4; 40 per cent. goes to mills and works, to be divided according to the results which their different ledgers may show.

The board of directors, being paid out of the general expenses, have no share in the distribution of the 58 per cent. of profits.

(3) *Commercial departments, sale and delivery.*—This class includes all the sale and delivery branches, clerical staff, and bookkeeping, at Angoulême travelers and agents for sale, and also the staff of the depot at Paris.

The special stock books of the depot in Paris shall for the future serve only to indicate the share to be allotted to its staff in the distribution of the profits reserved for the category of commercial service.

(4) Of the portion of 35 per cent. allotted to this category, 10 per cent. is allotted to wages, to be distributed at so much in the pound according to wages earned, in accordance with prescriptions of Nos. 12, 13, 14, and 15 of these rules; 12 per cent. is allotted to the employes of sale and delivery at Angoulême and Paris, the managers excepted, to be distributed amongst them as a dividend on their actual salary without adding the additions for length of service; 15 per cent. is allotted to the employes in the offices at Angoulême and Paris, managers excepted, to be distributed amongst them as dividend on actual salary without adding the additions for length of service, as in rule 15; 23 per cent. is allotted to the management of the depot in Paris, to that of the shops at Angoulême, and to the principals of the offices at Angoulême, to be distributed amongst them by the chief director at a meeting of the board; 40 per cent. is allotted to travelers and salesmen, to be distributed amongst them by the chief director at a meeting of the board.

The running account of each person interested is immediately credited to his share by the "commercial service," so that this account may be settled after each stock-taking.

(5) This rule divides the mills into three groups, each of which is charged with material, current expenses, and 5 per cent. on capital employed, and credited with the value of the output according to the prices current in Angoulême.

(6) On the 30th of September every year each of the works makes an exact return of its credits and liabilities. The result of this stock-taking determines the portion which accrues to it of the 40 per cent. to the credit of the coöperatives allotted to the class to which it belongs.

Of the profit thus ascertained, 40 per cent. is allotted to wages, to be distributed at so much in the pound, according to earnings, to each of the manufacturing staff, in accordance with the provisions of rules 12, 13, 14, and 15; 35 per cent. is allotted to management (manufacture, bookkeeping, machinery), to be distributed amongst those entitled to it on the advice of the manager of the manufactory by the chief director at a meeting of the board; 25 per cent.

is allotted to the head workmen, to be distributed amongst them at so much in the pound on their actual wages without adding their additions for length of service, as in rule 13.

The running account of each person interested is immediately credited with his share of the manufacturing fund, so that this account, after each stock-taking, may be closed.

(7) *Finishing works*.—The works of this class are four—envelopes, mourning, cardboard, etc. Each workshop is debited with all that the house expends upon it—ground rent, duties, insurance, wages, raw material, and different products (papers, cardboard, materials, construction, etc.), and also the interest at 5 per cent. per annum of the average capital employed by it for the year's account. It bears the expense of keeping up the normal depreciation of material and fixed capital, the depreciation fixed by the statutes being borne by the house. The discount from which it benefits on paper and cardboard is fixed at the maximum of 5 per cent., and it has no claim for any graduated discounts, such as the factories get from the firm. It bears all losses resulting from abatements on account or return which the firm has to make on goods supplied by the works. It is credited with all that it delivers according to prices and tariffs established by the chief director at a meeting of the board. As much as possible prices are those of sale, with a settled allowance for warehousing.

(9) For the envelopes, mourning paper, and cardboard works and for that of notebooks and cigarette paper, who buy themselves the papers they work, the distribution is made in the same way as in the mills which manufacture the paper. Forty per cent. is allotted to wages, to be distributed amongst the whole staff of the works in accordance with the provisions of rules 12, 13, 14, and 15; 35 per cent. is allotted to the management (manufacture, bookkeeping, machinery), to be distributed amongst those entitled to it by the chief director at a meeting of the board; 25 per cent. is allotted to the head workmen, to be distributed amongst them at so much in the pound on their actual wages without adding their claims for length of service. The running account of each one interested is immediately credited with his share.

[Rules 10 and 11 contain provisions relating to other departments similar to the provisions of rule 9.]

(12) *Coöperation of wages*.—Wages is the basis naturally indicated for the distribution amongst workmen of the share allotted to the element of labor in the profits of the company. The chief director is authorized to admit to participation on this basis of the profits of the house all the staff who are 15 years of age and have been in the service of the house at least 1 year at the moment of the stock-taking in which they participate. For this purpose the wages of each is entered, payment by payment, in his pass book and added up at the end of the commercial year, that is to say, the 30th of September.

(13) The coöperatives, at the distribution of profits allotted to wages, take a larger share, according to the length of time they have been in the service of the house.

Wages of workers having less than 5 years' service and being at least 15 years of age will be counted once in the distribution; wages of workers having 5 years' uninterrupted service and being at least 25 years of age at the moment when the account begins will be counted once and a quarter in the distribution of dividends on wages for the year, or 125 francs for 100 francs; wages of workers having 10 years' service and being at least 30 years of age will be counted once and a half, that is, 150 francs for 100 francs; wages of workers having 15 years' service and being at least 35 years of age will be counted once and three-quarters, that is, 175 francs for 100 francs; wages of workers having 20 years and more of service and being at least 40 years of age will be counted double, that is, 200 francs for 100 francs.

When a worker has reached the age of 50, the proportion of his share in the profits reserved for wages ceases to arise. It follows that the maximum of advantages fixed by this article can only be attained by workers who enter the service of the house before the age of 30.

(14) All the holders of pass books without exception, and no matter in which department or factory they work, provided they are admitted to participation, take a share in proportion to the wages established, as said in article 13 preceding, in the distribution of the 25 per cent. of general profits.

(15) Besides this first dividend of wages, each employé or workman of the house admitted to participation takes share in proportion to his established wages, as it is said in article 13 preceding, in the distribution of special profits of the service to which he is attached according to articles 4, 6, 9, 10, and 11 preceding, which fix the allotments of these special profits.

(36) The sums allotted according to this rule after each stock-taking to each coöperator and participator are, 6 months after stock-taking, absolutely his should he still be in the active service of the society at that date and should he continue until then to give satisfaction by his work and application.

(37) These sums are from that moment the absolute and personal property of the coöperator to whom they have been allotted. He has, if of age, the free disposal of it, subject to the reservation inscribed in the following thirty-eighth, thirty-ninth, and forty-first rules. If under age, these sums are deposited to his credit in the stock of the firm.

(44) A coöperative council has been created to second the chief director and managing board in the application of the present rules. This council is only for consultation; its decisions are not in any case obligatory on the directors. It shall be composed of the directors, the members of the managing board, the members of the council of directors instituted by the statutes of the society, and of nine members elected by the senior coöperatives of every rank and grade, men and women, on the principle of one representative from among the coöperatives of each factory and one from among the employés of the delivery and sale branches at Angoulême and one from the employés of the office at Angoulême. On account of its distance the staff of the depot in Paris shall not be represented in this council, except by its director when he thinks it advisable or feasible to assist at its meetings.

THOMAS BUSHILL & SONS.*

The following are the rules of the provident fund scheme established in 1888 on a profit-sharing basis by Thomas Bushill & Sons, manufacturing stationers, Coventry, for the benefit of their employés:

(1) From and after the 1st of September, 1888, the surplus (if any) of the clear profits of the business beyond such definite sum as is for the time being reserved to the firm for their own benefit (hereinafter referred to as the "reserved limit") shall be divided into two equal parts, one thereof to be distributed (not of legal right, but gratuitously) as a bonus to the employés in the manner defined by these rules, and the other to be retained by the firm.

(2) The present reserved limit has been communicated confidentially to Mr. Charles J. Angus, 43 Finsbury Circus, London, E. C., chartered accountant, and will not be altered for the first 3 years, if the scheme so long subsists; thereafter it may be raised or reduced by the firm, but (unless altered during some month of September) not so as to affect the distribution of profits for the financial year current at the time of the alteration. Notice of any alteration will be given to the employés in such manner as to let them know how far such alteration would have affected the last preceding distribution had it then been in force.

(3) The amount (if any) available for distribution will each year be certified by a chartered accountant and will be communicated to the employés.

(4) The employés entitled to share in the profits for any financial year are such only as at the commencement of such year on the 1st day of September were members of the sick club and have on or before that date delivered to the firm's cashier for the time being a certificate or other satisfactory evidence of age and a request to be entered on the list of profit-sharers.

(5) The scheme is to continue in force only until the firm gives notice to the employés putting an end thereto, but such notice, unless given during the month of September, will not take effect until the end of the financial year current at the time it is given.

(6) The employés' share of profits accruing in each financial year is (subject as after mentioned) to be distributed among them in proportion to their respective salaries or wages at the commencement of such year, taken for 1 week, exclusive of premiums, overtime, or other variable allowances. As to employés who are pieceworkers, such week's wages in the case of

* Rules given in full.

each such worker is to be arrived at (exclusively as aforesaid) by averaging the wages earned by him during the last month of the preceding financial year. In making any year's distribution it shall be permissible to the firm to carry forward undivided to the credit of the following year's employes' share of profits any sum which, if divided, would have given to them less than one week's wages calculated as aforesaid.

(7)—(a) If in any year the employes' share of profits should exceed such sum as would, if divided, give a bonus to them equivalent to 6 weeks' wages (that is, six times the amount of the 1 week mentioned in rule 6), the surplus above such sum shall go to form an employes' reserve fund.

(b) This fund will remain in the hands of the firm, bearing interest at the rate of 4 per cent. per annum, and may be applied, at the discretion of the firm, in aid of a subsequent year's distribution.

(c) If any such year's surplus should not be so applied within 5 years of its transference to the reserve fund, the same, with interest thereon, shall at the end of such 5 years be allotted to the provident funds of such of the employes as shall then be in the employ of the firm (subject as after mentioned) under the title "bonus from reserve."

(d) No employé shall be entitled to benefit by any bonus from reserve who was not a profit-sharer for the year in which the money allotted in reserve bonus was earned.

(e) The allotment shall be made in proportion to the respective wages or salaries of the employes sharing in the allotment (computed in accordance with rule 6) for the year in which the money allotted was earned.

(f) It shall be permissible to the firm, at their discretion, to a bonus from reserve at an earlier date than provided for in clause (c) of this rule.

(g) The accounts of this fund (whenever any moneys stand therein) will be audited yearly by a chartered accountant and submitted (confidentially) to the firm's cashier for the time being.

(8) The share of the profits accruing to each employé (hereinafter called "bonus") is to be divided into three equal parts; one of these will be paid over to him within 2 months of the end of the financial year, and the other two parts will be credited to him in the books of the firm as a provident fund for his benefit. There will be delivered to him a pass book, in which the account of his provident fund will be entered, and which must be produced when any payment from it is demanded.

(9) An employé whose service ends by notice given on either side, by illness, or by death will have a right to bonus for the financial year in which his service ends in proportion to the portion of the year elapsed to the end of the month preceding the end of his service. Any employé leaving under circumstances other than before mentioned shall lose such right. Any sum lost to an employé under this rule does not accrue to the firm, but goes wholly to increase the distribution to the other employes.

(10) If any employé ceases to be in the service of the firm upon or by reason of any act or default on his part, causing loss or damage to the firm, or is at the time indebted to the firm, his provident fund shall be applied to making good such loss or damage or to the payment of such debt. If the act be embezzlement or felony, his provident fund shall be wholly and absolutely forfeited to the firm. Whenever this rule is called into operation, the circumstances of the case will be reported to the consulting committee (formed under rule 20).

(11) Subject as after mentioned, no employé shall be entitled to withdraw any portion of his provident fund.

(12) Subject to rule 10, if an employé during his life ceases to be in the service of the firm from any cause, he shall remain entitled to his provident fund, but he, or any person claiming from or under him, shall not be entitled to withdraw it until such time as, if he had continued in the service of the firm, he would have been so entitled under rule 13; provided, however, that he may be voted earlier payment if the firm and the consulting committee (formed under rule 20) should be of the opinion that exceptional circumstances existing in his case make such earlier payment advisable.

(13) An employé, on attaining the age of 65 years or completing 25 years of continuous service, may on the following 31st day of December receive his provident fund accruing during that period. In reckoning the 25 years' service to the firm or predecessors of the firm commencing at any time since the 1st of January, 1880, is to be included, but not service while under the age of 21 years. Any such employé, notwithstanding receiving his provident fund, if he continues on in the service of the firm, will, as to future bonuses and otherwise, have the benefit of, and be subject to, these rules.

(14) A female employé leaving the service of the firm for marriage may claim an immediate payment of her provident fund.

(15) If an employé dies, his legal personal representatives will be entitled to immediate payment of his provident fund.

(16) In every case where an employé or any person claims payment such claims shall be in writing and delivered to the firm's cashier for the time being.

(17) If the firm should put an end to the scheme, the provident funds of all the employés will become payable to them on the 31st day of December following.

(18) The provident fund of each employé will, while the same remains in the hands of the firm, be credited with interest at the rate of 4 per cent. per annum; but no interest will be allowed for any fraction of a calendar year. The firm may, if they choose, deposit the provident fund of any employé, or part of such fund, in a savings bank, in which case the amount deposited is to be credited with so much interest only as allowed by the savings bank.

(19) The firm will give security upon property of ample value for all moneys from time to time belonging to the employés' provident funds, or so much thereof as may be remaining in their hands.

(20) The sick club committee are to form a consulting committee under this scheme for the firm to consult with on any question affecting any employé or arising under these rules on which the firm may desire assistance; nevertheless, the ultimate decision of every question is to rest with the firm.

(21) The employés or any of them will have neither the rights nor liabilities of partnership, nor are they or any of them to intermeddle or be concerned in the management of the business or the bookkeeping or accounts of the firm.

(22) Notices of communications to the employés are to be deemed effectually given or made if given or made in writing to the consulting committee (formed under rule 20).

(23) Alterations or modifications of these rules which experience may suggest as desirable may from time to time be made by the firm; but such changes, unless made during some month of September, are not to take effect until the end of the financial year current at the time they are made, nor are any such changes to take effect retrospectively so as to affect the amount of the provident fund, at the time they are made, of any employé. Notice of every such change will be given pursuant to rule 22.

(24) In these rules, unless there be something in the subject or context requiring a different construction, words importing the masculine gender includes also females; "firm" includes the present members of the firm, as also any person or persons succeeding to the business, whether such person or persons shall be the present members or one or more of them, together with any other person or persons, or of any other person or persons only; "business" means the business of the firm, whatever changes may take place in the nature or branches of such business or places where the same is carried on; "sick club" means the Cow Lane Steam Works sick club, and "sick club committee" the committee for the time being of such club; "financial year" means the year from the 1st of September to the 1st of September; "scheme" includes all relations between the firm and employés under these rules; "continuous service," as also any analogous expression, means (notwithstanding temporary absences) the whole period during which the relation of employer and employé virtually subsists and there is no dismissal; "provident fund" includes additions thereto under rule 7 and of interest.

Revised rules dated this 30th day of September, 1889.

NOTE.—Old rules 8 and 16 have been cancelled.

No. 126—7.

SOUTH METROPOLITAN GAS COMPANY.*

Basis and rules governing profit-sharing contracts.

Basis.—For the purpose of this scheme of profit-sharing on the principle of the sliding scale, the initial or standard price of gas shall be taken at 2s. 8d. per 1,000 feet.

When the price of gas is at or above 2s. 8d. per 1,000 feet, no bonus shall be given; but for every penny the price shall be reduced below 2s. 8d. a bonus equal in amount to 1 per cent. on the salary or wages shall be paid to each officer and workman so long as the directors are satisfied it is for the mutual benefit of the company and its employes.

Scale.—If the price of gas is 2s. 8d. per 1,000 feet, no bonus is given; if 2s. 7d., 1 per cent.; if 2s. 6d., 2 per cent.; if 2s. 5d., 3 per cent.; if 2s. 4d., 4 per cent.; if 2s. 3d., 5 per cent.; if 2s. 2d., 6 per cent.; if 2s. 1d., 7 per cent.; if 2s., 8 per cent., and so on.

Rules.—(1) Those employes (and those only) who engage and work under written agreements shall be entitled to the bonus.

(2) The bonus shall be calculated on the ordinary salary of the officers and on the daily wages earned by the workmen in the course of the year, which for this purpose shall end on the 30th of June in each year, no account being taken of overtime; and those workmen who may be on piecework shall have their bonus calculated on the amount they would have earned at their ordinary rate of wages in the regular working hours.

(3) No deduction will be made on account of absence caused by sickness, unless the total amount of such absence exceeds 2 calendar months in the year.

(4) The bonus shall not be earned until the 30th of June in each year or until the agreements for the short terms expire, and no employe or his representatives shall be entitled to any part of the bonus until June 30 or such term as may be set forth in the agreements for short periods, except in case of death or leaving the service of the company.

(5) On the declaration of the bonus on the 30th of June in each year or on the completion of the term specified in the agreement, the bonus shall become the absolute property of the employe, who shall have the right to withdraw the whole or any part of the year's bonus, or whatever amount, including interest (excepting the nest egg), which may stand to his credit in his account with the company, upon giving not less than 7 days' notice, at any time; and for such purpose a special form will be provided; otherwise the bonus will remain with the company and be entered in a pass book with which the employe will be provided, and under no circumstances whatever, except fraud, shall the bonus, with the interest (if any) so credited, be forfeited.

(6) The winter men may leave their bonus with the company at interest for any period not exceeding 12 months.

(7) Interest at the rate of 4 per cent. per annum shall be allowed on all amounts, excluding fractions of a pound, left with the company; the said interest shall be calculated up to June 30 in each year and no interest shall be allowed for any time less than 3 months, should the money be withdrawn at any intermediate period.

(8) The company will, in addition to the bonus that may be placed to the credit of any workman, receive and add to his account such amounts as the workman may be able to pay to the company from his savings, and on all such sums so received the company will pay interest thereon at the rate of 4 per cent. per annum, as per rule 7, subject to the following conditions: The company will receive at any time amounts of not less than 2s.; the total amount deposited in any year shall not exceed £30.

(9) The company will, on the application of any of their employes, make arrangements for the transfer and investment of the money deposited by the workmen, or any other money they may desire to invest, into the stock or shares of the company, which will pay to the investors about 5 per cent. interest.

(10) Any workman may at any time nominate in writing any person as his representative, in the event of his death, of his profit-sharing fund, and, on the receipt of the nomination

* Rules given in full.

by the secretary, such person will thereafter be treated as the legal representative of the said workman, and, on the production of the registrar's certificate of death, he may withdraw the whole of the money standing to the credit of the deceased workman; but, if no nomination has been made or no provision for legal representation otherwise taken, the money will, on the production of the certificate aforesaid, be paid to the next of kin of the deceased workman.

(11) Whenever, under the previous rule, on the decease of the employé the company has paid to the person so nominated the amount standing to such deceased employé's credit, such payment shall be valid and effectual against any demand made upon or against the company by any person whatsoever.

(12) A committee of management shall be elected, to consist of the chairman of the board of directors and 9 members elected by the board and an equal number of members elected by the employés, 3 to represent Old Kent Road, 2 Vauxhall, and 1 for each of the other stations, who shall be chosen by ballot, one-third of the members of the committee to retire by rotation every year, but to be eligible for reëlection. Seven members shall constitute a quorum, and every resolution, to be binding at such meeting, shall have for its support a majority of the members of the committee present at and voting upon the resolution.

(13) The committee shall appoint a secretary, who shall have no power of voting.

(14) In the event of any difference arising as to the construction of these rules, it shall be referred to the committee, whose decision shall be final and conclusive.

(15) There shall be two auditors, one to be elected by the workmen, the other to be appointed by the company, whose duty it will be to compare and initial the workman's pass book with the general account, and for that purpose all pass books must be handed in or sent to the head office between the 30th of June and the 3d of July in each year.

(16) The committee shall meet for the transaction of business when summoned by the secretary, but not less than twice in each year; and on a requisition of 20 employés or 3 of their own number at any time.

(17) The secretary shall receive all notices, summon all meetings of the committee, and obey the orders of committee in all other matters and things whatsoever.

(18) No alteration shall be made in these rules whatever, except by the sanction of the committee and subject to notice of at least 1 calendar month, which notice shall state the nature of the alterations and be posted in conspicuous places at the various stations; but nothing in these rules contained, or which may be contained in any rules hereafter agreed upon, shall give to any employé, whether officer or workman, any right to interfere in the management or control of the company's works or in the working or carrying on of the company's business.

(19) The company shall provide all the books and other incidentals and keep the accounts, together with a record of all transactions, at the company's sole cost and charges.

Nest egg.—The nest egg stands in a different position to the ordinary bonus. It is a gift by the company to those workmen who were in the service before June 30, 1889, and is to be subject to certain special regulations until June 30, 1894, when all distinctions will cease; but in the meantime the following regulations are to apply to the nest egg:

(1) All workmen who were in the company's regular employ on June 30, 1889, who signed agreements before December 31, 1889, shall have placed to their credit a sum of money equal to the amount to which they would have been entitled if the profit-sharing or bonus scheme had been started from June 30, 1886.

This gives each regular workman who has signed an agreement prior to December 31, 1889, 2 per cent. on his wages for the year ended June 30, 1887, 3 per cent. on his wages for the year ended June 30, 1888, 4 per cent. on his wages for the year ended June 30, 1889, which is equal to 9 per cent. on 1 year.

(2) This nest egg has been thus placed to each man's credit and is to be left in the hands of the company for 5 years from July 1, 1889, and will accumulate at compound interest at the rate of 4 per cent. per annum.

After June 30, 1894, the nest egg, with interest, will be subject to the rules applying to the bonus; it may be withdrawn or remain with the company at 4 per cent. interest.

(3) In the event of death, the legal representative of the workmen shall be entitled to draw out the nest egg, with interest accrued thereon, on production of registrar's certificate of death and the authority constituting the person applying the legal representative of the deceased workman.

(4) Any workman who is placed on the superannuation fund may, after June 30, 1890, if he so desires, draw out the nest egg, with interest thereon, or it may remain with the company at 4 per cent. interest.

(5) After June 30, 1890, any workman who leaves the service of the company in a legal manner may draw out the nest egg, together with any interest that may have accrued thereon.

CLARKE, NICKOLLS & COOMBS (LIMITED).*

The following is a scheme for carrying into effect the provisions contained in subsection "K" of the company's memorandum of association, empowering them to enter into arrangements for sharing profits with work people:

The object is to give the work people a direct interest in the prosperity of the company and to facilitate the acquisition by the employés of the company's property.

ARTICLE 1. From and after January 1, 1890, an interest, consisting in a share of the net profits of the year, will be allotted gratuitously to all the employés or work people of both sexes who shall have been designated as participants in these advantages.

ART. 2. In order to be entitled to a share in the profits, it is necessary to have worked in the employment of the company for 12 consecutive months ending December 31 (absence from sickness or other equally satisfactory cause alone excepted) and to be working there still at the time of balancing accounts; when these conditions are not fulfilled, only the ordinary wages will be paid.

ART. 3. The share of profits divisible among the work people shall be ascertained as follows: After paying all salaries, liabilities, or agreements, making allowances for bad debts and the usual provision for depreciation and other reserves, paying interest on debentures, dividend on preference shares, and a dividend at the rate of 6 per cent. on the ordinary capital of the company, any balance of profit remaining will be divided into two parts, of which one-half shall belong to the ordinary shareholders and go to augment their dividend and the other half shall belong to the total wages fund of the work people, clerks, and other employés of the company, excepting such as are paid wholly and [or] in part by commission.

ART. 4. The distribution of the share in profits among the participants qualified under article 2 will be made in the proportion that the sums paid to each respectively in wages or salaries shall bear to the total sum paid in wages and salaries during the year.

ART. 5. Every otherwise qualified participant who shall have voluntarily quitted or have been dismissed from the employment of the company during the year will lose all rights to the participation of that year.

Provident fund.

ART. 6. The unappropriated portion of profits accruing to wages fund under article 3, but which is not divisible among employés by reason of their nonfulfillment of conditions stipulated in article 2, shall be invested preferentially in shares or debentures of the company and set aside yearly to form a provident fund.

ART. 7. The provident fund is established for the benefit of the workmen, workwomen, and employés of the company generally, and will be used at the discretion of the directors:

(a) For an allowance, when needed, to any person who may fall sick while in the company's employment.

(b) For an allowance to the widow of an employé who may die while in the company's employment.

* Rules given in full.

(c) For an allowance to any employé who, having been 25 years or upwards in the company's employment, may be incapacitated from further labor.

ART. 8. The directors may at their discretion make additions to the provident fund from sources at their disposal.

General provisions.

ART. 9. The accounts of the company will be made up yearly to December 31, and, after being audited by the company's auditor, who shall at all times be a chartered public accountant, they will be submitted for the formal approval of the directors and the annual general meeting of the shareholders, and the division of profits will take place immediately thereafter; but it is to be clearly understood that, having this guaranty of good faith, the participants shall possess no right whatever to intermeddle in any respect with the bookkeeping.

ART. 10. It is declared that the directors are sole judges of all claims which may arise in reference to the present regulations.

ART. 11. If at any time it be decided by the directors to abandon profit-sharing, they reserve the right to do so after reasonable notice, and to divide amongst the employés as they may think fit any sum standing at credit of the provident fund. But it is the object and hope of the directors that under this scheme the employés may, in process of time, become owners of the company's undertaking; and it is intended, with the growth of the provident fund, to associate some of the employés of the company with them in the management of the fund and, except as regards executive functions, in the conduct of the business; but, manifestly, until such an interest has substantially grown, it would not be equitable to do so.

ART. 12. The sums to be paid, the dividends, interests, or allowances to be made in consequence of these regulations, whether to participants or to the members of their families designated in article 7, are hereby declared to be free gifts only, and not to confer any right.

ART. 13. Modifications which experience may render advisable may be made in the present regulations at the direction of the directors.

By order of the board.

JOSHUA HOYLE & SONS (LIMITED).

Memorandum of association.

(3) It is intended, in the first instance, to issue 31,200 shares, and out of this number the said firm are, in pursuance of the said agreement, to take 23,400 shares, leaving 7,800 shares to be subscribed for by the work people employed in the business of the company.

(7) The 23,400 shares taken by the said firm are to be called "retained shares," and the shares taken or held by the work people are to be called "industrial partnership shares."

(10) The members of the present firm of Messrs. Joshua Hoyle & Sons are, as governing directors, to retain the full and supreme control in the management of the company's business and affairs, giving, without taking any salary, such care and attention to the conduct of the business as they may in the interest of the company deem necessary; and the others of the first directors are to give their whole time to the management of their various departments of the business, receiving salaries as they have hitherto done.

Articles of association.

ART. 59. All directors, other than the governing directors, shall be personally engaged in the business of the company, devoting the whole of their time thereto.

ART. 66. The governing directors collectively shall hold not less than 6,000 shares in the company in their own right, and if and while the governing directors collectively or the governing director for the time being shall hold less than 6,000 shares, the peculiar powers of the governing directors or governing director shall be suspended; but on the acquisition of the required qualification their peculiar powers shall revive; but the regulations of the company do not prescribe the proportions in which they shall respectively be interested in the prescribed qualification. And this article is fundamental.

ART. 67. A governing director shall not be removable or subject to retirement in rotation, but shall continue in office, unless and until he resigns or ceases to hold shares in the company. And this article is fundamental.

ART. 68. The provisions of these articles with respect to governing directors apply, when there are two or more governing, to the two or more; and when there is only one governing director, to the one; and the authorities conferred by these presents on the governing directors may accordingly be exercised by one governing director when there is only one; and all expressions in these articles referring to governing directors in the plural extend and apply to a single governing director, when there is only one. And this article is fundamental.

ART. 69. Every resolution in writing under the hands of the governing directors entered in the minutes of the proceedings of the board of directors and sealed with the company's seal shall be as valid and as binding on the company as a resolution of a general meeting or a resolution of the board. And this article is fundamental.

ART. 70. The governing directors may cause any resolution in writing under the hands of the governing directors to be entered in the minutes of the proceedings of the board of directors and cause the company's seal to be affixed thereto, so as to make it the act of the company. And this article is fundamental.

ART. 71. In addition to the other authorities expressly or by implication conferred on the governing directors by these articles, or by the agreement set forth in the schedule to these articles, and hereby adopted, they shall have, to the exclusion of general meetings and the board, full authority to determine the following matters :

- (a) Who shall be admitted to be members.
- (b) Who shall be directors.
- (c) The salaries or remuneration of the directors, other than the governing directors.
- (d) What resolutions shall be proposed to general meetings, members, and board meetings of directors respectively.
- (e) What shall be the amounts carried to the reserved fund and how that fund shall be dealt with.
- (f) What shall be the amounts of dividends and when they shall be declared and paid.
- (g) What business shall be undertaken or given up by the company.

And this article is fundamental.

ART. 72. Inasmuch as the governing directors are to have the supreme control in the management of the concern, they may, when and as they think fit, exercise any or all of the authorities expressly or by implication conferred by these articles on general meetings and boards respectively; and, to the extent to which they do so, their authority shall supersede the authority of general meetings and boards respectively, save only that it shall not be competent to the governing directors to determine by their own authority any matter which by law is required to be determined by special resolution. And this article is fundamental.

ART. 73. Each of the said Isaac Hoyle and Edward Hoyle and any successor to be appointed under this article may, by writing, under his hand, attested by one witness or by his will or any testamentary instrument, appoint any person to be a governing director in his place and as his successor from the time named for that purpose in the instrument of appointment, and the person so appointed shall be a governing director accordingly in the place of the person by whom he was appointed from the time named or implied in the appointment, if at or within one calendar month from that time he is a member of the company, and shall thenceforth, while holding shares in the company, have all the powers and authorities conferred on governing directors by these articles. And this article is fundamental.

ART. 74. Powers to present governing directors to appoint additional governing directors :

(a) Each of the said Isaac Hoyle and Edward Hoyle, or, if this power has not been previously exercised, any one of his successors, may, by attested writing or will, appoint one additional governing director.

ART. 76. In case of any difference of opinion between or amongst the governing directors on any matter within the authority of the governing directors or affecting the affairs of the

company, the difference shall be determined by a simple majority of their votes, each governing director having one vote for each share held by him, and anything done by a governing director in accordance with the votes of the governing directors or director holding a majority of them shall be as valid as if done by both or all of the governing directors.

ART. 77. The clause in the said agreement and in the introduction to the articles of association, which precludes the original governing directors from receiving salaries, shall not prevent any other governing director from receiving a salary with the sanction of a general meeting.

Shares.

ART. 107. All the shares in the company shall be numbered in arithmetical progression, beginning with No. 1.

ART. 108. Industrial partnership shares shall be also distinguished on the registers of the company and in the certificate of ownership as industrial partnership shares.

ART. 109. Shares may be purchased by the company as provided by the regulations for the time being in force.

Transfer of shares.

ART. 112. The transfer of a share shall be effected by an instrument in such form as the board from time to time prescribe.

ART. 113. Until the board otherwise prescribe, the instrument of transfer shall be in the following form and under the respective hands and seals of the transferor and transferee, that is to say:

"I, (A. B.)—, of—, a member of Joshua Hoyle & Sons (limited), in consideration of—paid to me by (C. D.)—, of—, hereby transfer—shares of the capital of the company, Nos.—, and all my right and interest in and to the same to the said (C. D.)—, subject to the conditions on which I now hold the same, and I, the said (C. D.)—, accept the same, subject to those conditions.

"As witness our respective hands and seals the—day of—, A. D. 18—."

ART. 114. The register of transfers shall be closed during the 14 days next before every ordinary meeting.

ART. 115. The governing directors, their executors, administrators, or assigns may dispose of the retained shares to such person or persons as they shall think proper.

ART. 116. A parent or guardian, committee, husband, executor, or administrator of an infant, lunatic, idiot, female, or deceased shareholder, or the trustee of the estate of a bankrupt shall not, as such, be entitled to be registered as a member.

ART. 117. Any such parent, guardian, committee, husband, executor, administrator, or trustee in bankruptcy of a member shall be recognized by the company as owner for the purpose of transfer of any share of the incapacitated or deceased member after producing to the board such evidence of his title as reasonably satisfies them, and an entry of the evidence shall be made in the minutes of their proceedings.

ART. 118. A transfer of a share otherwise than by or to a governing director shall not be made by any person until after he has given or left at the registered office of the company at least 7 days' notice in writing of his desire to make the transfer, and of the number of every share desired to be transferred, and of the name, residence, and description of the proposed transferee. And this article is fundamental.

ART. 119. No industrial partnership share shall be held by any person who is not either a servant or workman in the service of the company or a trustee thereof for the company or a governing director; and, if the holder of an industrial partnership share (not being a governing director or a trustee for the company) shall cease to be employed as a servant or workman by the company or die, the right and title to each share held by him and to an apportioned part of the dividends thereon from that event shall immediately thereupon vest in such person or persons as the governing director or, if there is no governing director, the board shall at any time thereafter appoint to be the transferee or transferees thereof, and, on the registration

of the share in the name or names of the transferee or transferees so appointed, the absolute title to the share shall rest in him or them; but the then late member, his executors or administrators shall execute a formal transfer thereof to the said nominee or nominees, and until that is done shall not be entitled to receive the value of the share or any debt or money owing to him from the company on any account. And this article is fundamental.

ART. 120. The governing directors shall have the privilege of purchasing and holding for their own benefit any shares which may be transferable under the last preceding article or which may be voluntarily sold by a member. Any industrial partnership shares not so held by the governing directors, or one or more of them, shall be held by the person or persons to whom they shall be transferred under the last preceding article in trust for the company, and to be disposed of to a person or persons qualified to hold the same, as the governing directors or the board shall direct. And this article is fundamental.

ART. 121. A transfer of a share shall not be made without the approval of the governing directors or, if the governing directors do not express their assent or dissent within 7 days after being requested to do so, the approval of the board.

ART. 123. If the governing directors of the board within the said 14 days give notice of their disapproval of the proposed transfer, then, if the person desiring to make the transfer, by notice in writing delivered to the directors or left at the office, so require, the governing directors shall purchase the share for their own benefit, or, if they decline to do so, they or the board shall either purchase in the name of a trustee for the company or find a person to purchase in his own right the share at the value thereof, or, if the governing directors or the board fail to do so within 14 days after being so required by the proposed transferrer, then it shall be deemed that the proposed transfer is approved.

ART. 124. The governing directors shall have the option of purchasing every share in the company at the value thereof before it is sold or transferred to the company or any other purchaser or person. And this article is fundamental.

ART. 125. The value of any share or shares of the company proposed and to be purchased by the governing directors or by or on behalf of the company shall in each case be ascertained by the governing directors, and the valuation shall be binding on the vendor; provided, that if a member or his representative or assign is dissatisfied with the valuation made by the governing directors, and shall by writing desire the governing directors or the board to refer the valuation to the chairman of the stock exchange in Manchester for revision, the governing directors or the board shall, at the cost of the person requiring the same, refer the same accordingly, and the valuation to be certified in writing by the chairman of the stock exchange of Manchester shall be binding on both parties, and, if this provision for reference fails, the value may, at the cost of the person requiring the same, be at any time ascertained for the space of 1 calendar month by reference to arbitration under the general provision for arbitration in these articles. And this article is fundamental.

ART. 126. On the transfer of any share the certificate of title thereto shall, on request, be delivered up to the secretary.

ART. 158. Any share which the governing directors shall decline to take may be purchased by the company in the name of a trustee from any person willing to sell it and at such price as the board think fit.

ART. 159. Provided that the board shall not, without the sanction of a general meeting, apply for any such purpose any part of the revenue of the company other than revenue carried to the credit of the reserved fund.

ART. 160. Shares so purchased may, at the discretion of the board, be sold or disposed of by them or be held in trust for the company, as they deem most advantageous for the company.

TRAFALGAR ESTATE.*

(1) The quantity of land, arable and pasture, is 1,000 acres. The annual rent is 7s. 6d. per acre all round. The valuation of the live and dead farming stock, machinery and imple-

* Rules given in full.

ments, acts of husbandry, working capital, etc., amounts to £4,492, as per account annexed, upon which 5 per cent. per annum will be charged until repaid.

(2) The bailiff in charge will therefore have absolute authority in the management of the farm, subject only to the owner of the estate. He will do all the buying and selling. He will engage and discharge work people just as if he were farming solely on his own account and in everything exercise his judgment and skill for the profitable working of the estate.

(3) The valuation taken on March 25, 1890, shall be the basis of all future valuation. Thus the live and dead stock, acts of husbandry, and other effects at each annual stock-taking shall be taken at the same prices in each class regardless of any fluctuations in the market values, so that the profit or loss on the year will be determined by the value of the sales during the year and not by any imaginary increase or decrease in the value of anything not yet sold.

(4) The machinery and implements, wagons, carts, horses, etc., shall be kept up to their present value and efficiency.

(5) Everyone working upon the estate will be paid the full wages of the district, and those who have been employed not less than 6 months of the year will share in any profit that has been made during the year in exact proportion to the amount of wages received. This bonus will be carried to each person's credit in the farm accounts and will bear interest at the rate of 5 per cent. per annum, to accumulate annually until withdrawn under any of the following rules.

(6) The amounts credited to the work people's account each year shall be applied to pay off the loan advanced by Mr. George Holloway, whose charge for interest will be reduced each year by exactly the same amount as the work people's interest is increased; and, when the total amount of the loan has been thus repaid, his claim upon the earnings of the estate will be for rent only, and all future profits may be paid to the work people in cash, each person receiving his or her proportion according to the amount of his or her accumulation in the capital employed upon the estate.

(7) At every annual stock-taking each person will receive a certificate (signed by the owner of the estate) declaring the amount which he or she has accumulated in the capital employed upon the estate, and, in the event of the death of any such person, the full amount due upon such certificate shall be paid in cash to the legal representative of such deceased person.

(8) Any person may withdraw from the scheme and receive the amount standing to his or her credit at the last annual stock-taking upon forfeiting one-fourth of the amount to the general fund as compensation to those who remain in the undertaking, and such person will no longer share in any future profit or loss in the scheme.

(9) Every transaction during each year, whether buying or selling, shall be entered in the farm accounts, and the books shall be open to inspection by everyone working upon the estate at each quarter day.

(10) The woods, coverts, and timber are excluded from the scheme, and all sporting rights are reserved by the owner of the estate; but, as hares and rabbits partly feed upon the land outside the coverts, he will pay to the farming fund 3s. for each hare and 1s. for each rabbit that he or his friends may at any time take away with them. The keeper's wages will be paid half by the owner and half from the farm fund.

(11) The bailiff has power to discharge any person who is not working to his satisfaction, and the owner of the estate will advance the amount due to him upon his certificate, either with or without forfeit referred to in rule 8, as the circumstances of the case may dictate.

(12) The owner of the estate reserves to himself the right to pay out in full to all or any of the persons the amounts standing to their credit in the books of the undertaking and to sever their connection with the scheme at any time that it is not working to his satisfaction.

Five per cent. interest will be charged upon the amount expended upon providing additional water supply.

CHAIX ET CIE.

ARTICLE 1. From and after January 1, 1872, an interest, consisting in a share of the net profits of the year, will be allotted gratuitously to all the employés or work people of both sexes who shall have been designated as participants in these advantages.

This share is fixed for the year 1872 at 10 per cent.

ART. 2. To be admitted as participants, the workmen, workwomen, and employés must have 3 years of consecutive presence in the house, must have made proof of zeal and aptitude in their functions, and must address M. Chaix an application accompanied by a certificate of birth.

In order to form the first participating body, all those are from this day forward admitted who on January 1, 1872, have had at least 3 years of consecutive presence in the house.

ART. 3. Beyond the body of participants, candidates for participation may, according to their services, be called to enjoy a part of the advantages of participation. A decision of the consulting committee will fix each year the nature and extent of these advantages.

ART. 4. The apprentices of the house will be admitted as participants from and after the 1st of January preceding the close of their apprenticeship; but their 20 years of presence will only be reckoned from the date of their majority.

ART. 5. The distribution of the share in profits among the participants will be made in proportion to the sums which they shall have received during the year, whether in salaries or in wages, and according to the arrangements fixed in article 6 here following.

In determining the dividend of each individual no account will be taken of gratuities or of other variable allowances.

ART. 6. The sum allotted to each participant will be divided into two equal parts.

One of these will be paid over to him every year after the approval of the balance sheet and at fixed epochs; the other will be placed to his provident and pension account, which is referred to below.

ART. 7. Every participant who shall voluntarily have quitted the house before the end of the year will lose all right to the participation of the current year.

ART. 8. A participant who is dismissed will not, whatever the reason for his dismissal, lose his rights in the participation; his interest in profits will, however, end with the month preceding that in which he quits the house.

ART. 9. In the two cases provided for in articles 7 and 8 the participant can not claim the first part of the sum allotted to him in virtue of article 6 before the time of the general distribution, and he will receive it under the same conditions as the other participants.

The second part will be liquidated in accordance with articles 19 and 23.

ART. 10. In the event of decrease in business or of a temporary withdrawal from the house, due to whatever cause, the participant who wishes to preserve his rights must obtain beforehand from M. Chaix written leave of absence.

ART. 11. Participants who have quitted the house under the conditions contemplated by article 10 must hold themselves in readiness to obey the summons which shall be addressed to them. Should they fail to appear, a notice will be sent to their residence by registered letter, to which they shall be held bound to reply within 48 hours at the latest, engaging to return to the house in the course of 8 days, failing which they shall be reputed to have resigned at the date of their withdrawal from the house.

ART. 12. Participants obliged to quit the house in order to perform their military service and who wish to preserve their rights are to inform M. Chaix of the fact. They are further required to apply to him in the month succeeding the expiration of their term of military duty for readmission to their employment.

Provident and pension fund.

Articles 13 to 26 refer to a provident and pension fund available for persons who have worked continuously for the house 20 years or who have reached the age of 60 years (article 14).

The most notable provisions are :

ART. 17. When a participant, having completed his twentieth year of service or, failing that, his sixtieth year of age, quits the house voluntarily or in consequence of dismissal, his provident and pension account is liquidated on his demand in accordance with article 23.

In this case his account ceases to share in the advantages resulting from lapses, but it continues to accumulate by participation and by the payments made by M. Chaix in virtue of article 16; but the liquidation of this new account can not take place until its owner quits the house.

ART. 19. Every participant who, before having attained his twentieth year of presence or his sixtieth year of age, quits the house, either voluntarily or in consequence of dismissal, may require the liquidation of his provident and pension account ; but this liquidation must, on pain of forfeiture, be demanded in writing of M. Chaix within the period of 1 year and 1 day from the date of the participant's departure. This liquidation includes only the sums paid under article 6; it takes place under the conditions provided in article 23, and not until 1 year after the participant has left the house.

The sums paid to his account in accordance with article 16 are distributed among the accounts of the remaining participants in proportion to the sums already standing in them respectively.

ART. 24. The persons appointed to receive, after the death of a participant, the sums placed in his account are :

(1) Wife or husband, where no legal separation has occurred.

(2) Children, legitimate or legitimated by subsequent marriage, adopted children, and grandchildren.

(3) Ascendant relatives.

The committee of consultation may, on the demand of the persons interested, modify the above provision.

Failing the successors above appointed, the sums or securities arising from the liquidation of a deceased participant's account are placed to the credit of the remaining participants in proportion to the sums already standing in their respective accounts.

ART. 26. The account of each participant will be credited with a yearly interest of 4 per cent., produced by the sums standing in it, so long as the house retains the financial management of these sums.

This management may, with the assent of the consulting committee, be eventually intrusted either to an insurance company, a society of credit, or a public department.

Consulting committee of superintendence.

ART. 27. A consulting committee of superintendence is instituted to assist M. Chaix—the nine office-bearers of the mutual aid society, renewed each year, three at a time, in general meeting, the three senior heads of departments and foremen, and the six senior workmen, workwomen, or employés of the house.

ART. 28. This committee is formed of nineteen members, viz, M. Chaix, the office-bearers of the mutual aid society, the three senior heads of departments and foremen, and the six senior employés.

General provisions.

ART. 30. There shall be delivered to every participant a pass book, in which shall be entered all the sums placed to his account.

ART. 32. The sums to be paid, the dividends, interests, or pensions to be supplied in consequence of the present regulations, whether to participants or to the members of their families designated in article 24, are beforehand expressly declared to be free gifts and for alimony, and, as such, incapable of cession or seizure.

ART. 33. It is declared that M. Chaix is sole judge of all claims which may arise in reference to the present regulations. He will, however, hear the opinion of the consulting committee.

ART. 34. The yearly division of profits takes place after the approval of the accounts by the sleeping partners of the house, but the participants do not possess the right of intermeddling in any respect with the bookkeeping.

ART. 35. Employés, workmen, and workwomen coming from an establishment provided with similar institutions, and in which they are already participating members, will, on their demand, be admitted *ipso facto* as candidates for participation. The length of their period of probation for becoming participants will be fixed by the committee within the 3 months following their admission to the house, but is in no case to exceed 1 year.

ART. 36. The present provisions apply to the employés of the book-selling department in so far as concerns the profits realized in that branch.

ART. 37. Modification which experience may render it advisable to make in the present regulations shall produce no retrospective effect.

ART. 38. M. Chaix expressly reserves to himself the power of abolishing the present regulations in the event of his not being satisfied with their results.

Should that step be determined upon, the provident fund would be liquidated on the next following 31st of December, and the sums or securities appertaining to it would be individually distributed as cash after approval by the sleeping partners of the house of the year's balance sheet.

ART. 39. If at M. Chaix's death his successors did not choose to continue profit-sharing, the provident and pension fund would be liquidated as directed in the preceding article.

[Appendix C.]

FINANCIAL RESULTS.

Table showing the dividends by Laroche-Joubert et Cie. from 1879 to 1888, inclusive.

Description.	1879.	1880.	1881.	1882.	Total.
	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
Dividend to employés, heads of departments, etc.....	61,463.02	68,078.74	71,053.68	109,368.96	309,964.40
Dividend on salaries and wages.....	18,857.97	22,351.70	28,626.93	37,448.40	107,285.00
Dividend paid over and above the 5 per cent. interest on the capital possessed by the employés and workmen.....	10,363.50	12,743.77	14,410.79	16,366.36	53,884.42
Dividend to customers.....	19,872.99	21,112.80	28,840.92	32,522.72	102,349.43
Total.....	110,557.48	124,287.01	142,932.32	195,706.44	573,483.25

Description.	1883.	1884.	1885.	1886.	Total.
	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
Dividend to employés, heads of departments, etc.....	89,653.53	83,121.14	58,870.34	48,424.04	284,069.05
Dividend on salaries and wages.....	32,172.65	47,908.28	30,670.78	27,656.12	138,487.83
Dividend paid over and above the 5 per cent. interest on the capital possessed by the employés and workmen.....	8,986.90	10,239.27	4,100.78	3,911.25	27,238.20
Dividend to customers.....	18,409.10	21,477.28	6,818.18	6,930.10	53,634.66
Total.....	149,222.18	166,745.97	100,460.08	86,921.51	503,349.74

Table showing the dividends by Laroche-Joubert et Cie., etc.—Continued.

Description.	1887.	1888.	Total.
	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
Dividend to employés, heads of departments, etc.....	67,078.96	61,415.26	128,494.22
Dividend on salaries and wages.....	38,285.19	34,720.24	72,905.43
Dividend paid over and above the 5 per cent. interest on the capital possessed by the employés and workmen.....	11,638.03	12,659.00	24,397.03
Dividend to customers.....	8,323.62	9,318.08	17,641.72
Total.....	125,275.80	118,112.58	430,769.97

Table showing financial condition of Maison Leclaire, Redouly et Cie.

Years.	Business of firm.	Profits shared.			Annual wages.	Number of participators.	Proportion to wages.
		Tobenefit society.	Paid in cash.	Total.			
	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Y</i>	<i>Per cent.</i>
1842 to 1864.....				460,000			
1865.....		25,233	24,855	50,088			
1866.....		48,470	31,530	80,000			
1867.....		38,832	26,035	64,867			
1868.....		73,975	26,025	100,000			
1869.....	1,555,263	45,000	90,000	135,000	558,028		16.13
1870.....	1,071,853	30,812	61,625	92,437	406,414	758	14.337
1871.....	1,533,978	33,750	65,500	101,250	556,495	1,038	12.129
1872.....	1,952,085	44,125	88,250	132,375	695,429	976	12.31
1873.....	1,560,203	32,250	64,500	96,750	508,167	633	12.692
1874.....	1,658,593	39,500	79,000	118,500	600,293	827	13.14
1875.....	2,000,566	50,000	100,000	150,000	696,569	1,052	14.35
1876.....	1,984,627	56,250	112,500	168,750	685,575	1,081	16.31
1877.....	1,715,252	57,000	115,000	172,500	645,484	826	17.81
1878.....	1,980,919	65,000	130,000	195,000	713,644	1,032	18.216
1879.....	2,349,956	80,000	160,000	240,000	867,870	1,125	18.435
1880.....	2,921,368	95,000	190,000	285,000	972,424	949	19.53
1881.....	3,033,962	107,500	215,000	322,000	1,068,607	1,125	20.11
1882.....	3,137,004	120,375	240,750	361,125	1,069,979	998	22.50
1883.....	2,530,154	112,500	225,000	337,500	966,908	838	23.27
1884.....	2,553,381	115,000	230,000	345,000	967,606	824	23.77
1885.....	2,017,644	91,250	182,500	273,750	869,050	710	21
1886.....	2,059,559	91,250	182,500	273,750	869,000	716	21
1887.....	2,270,373	95,000	190,000	285,000	896,330	780	21.19
1888.....	2,485,860	110,000	220,000	330,000	980,363	889	22.44
1889.....	2,722,779	114,000	228,000	342,000	1,085,230	959	21
Total.....				2,187,000			
Report from 1842 to 1882.....				3,326,142			
Grand total.....				5,513,142			

On September 29, 1863, occurred the consolidation of the Société Leclaire, Alfred Defournaux et Cie., with the Société de Secours Mutuels Commanditaire.

On January 6, 1869, the signing of the Charte du Travail Associé occurred under the form of a new act, which has governed the house since that period.

On July 13, 1872, M. Leclaire died, M. Alfred Defournaux became manager, and M. Redouly was elected assistant manager.

On November 30, 1875, following the death of M. Defournaux, M. Redouly succeeded him and M. Marquot was elected assistant manager.

South Metropolitan Gas Company.

The following statement relates to the workmen only who are paid weekly wages, all officers or members of the staff being excluded from these figures:

	£	s.	d.
Nest egg.....	6,790	13	1
Interest	270	2	9
Bonus to June 30, 1890.....	5,377	8	7
Total	12,438	4	5
Total withdrawals to December 31, 1890.....	3,628	0	11
Total	8,810	3	6
Savings to December 31, 1890.....	2,966	18	2
Total	11,777	1	8
C stock bought by men (£685 at 2.42).....	1,657	14	0

[Appendix D.]

PRINTED AUTHORITIES ON PROFIT-SHARING.

Enquête de la Commission Extra-Parlementaire des Associations Ouvrières; Paris, 1883. Die Gewinnbetheiligung von Victor Böhmert; Leipzig, 1878; 2 vols. Profit-sharing, by Sedley Taylor; London, Kegan Paul, 1884. Profit-sharing, by Sedley Taylor; transactions Manchester Statistical Society, 1883. Reports of Her Majesty's Representatives Abroad on the System of Coöperation in Foreign Countries; London, 1886; C. 4783. Participations aux Bénéfices, par V. Böhmert, traduit par A. Trombert; Paris, Chaix, 1888. Profit-Sharing by N. P. Gilman; London, Macmillan, 1889. The Labor Association, by E. Vansittart Neale; London, 1887. The Labor Association, by E. Vansittart Neale; London, 1887; reports Nos. 4 and 5. National Coöperative Festival; report, 1889. National Coöperative Festival; report, 1890. Charity Organization Review, January, 1890; profit-sharing, by David F. Schloss. Contemporary Review, April, 1890; Industrial Coöperation, by David F. Schloss. Coöperative Congress, Ipswich; inaugural address by Alfred Marshall, M. A.; 1889. Coöperative Production Conference; Aberdeen, 1887. Profit-Sharing, by Carroll D. Wright, Chief of the Massachusetts Labor Bureau; Boston, 1886. Congrès International de la Participation aux Bénéfices; Comptes-Rendu; Paris, Chaix, 1890. Le Contrat de Participations aux Bénéfices, par Charles Robert; Paris, Chaix, 1889. Familistère de Guise, par F. Bernardot; Guise, 1889. Maison Piat; Havre, 1889. Mutualité Sociale Godin; Paris, Guillaumin, 1880. Consular Report; Bulgaria, 1890; C. 2805-155. Friendly Societies Report for 1889. Revue de Deux Mondes, May 1, 1870; Paul Leroy, Beaulieu. Bulletin de la Participation aux Bénéfices, 1885-'90. Exposition Universelle de 1889; section d'économie sociale; rapport de M. Charles Robert (in proof). Report on the Social Economy Section of the Universal International Exhibition of 1889 at Paris, by Jules Helbronner; Sessional Papers, Dominion of Canada. 1890, No. 20; Ottawa, 1890.

TRADE AND INDUSTRIES OF LOWER CALIFORNIA.

REPORT BY CONSUL VIOSCA, OF LA PAZ.

BACKWARD CONDITION OF THE STATE.

Although the Republic of Mexico has enjoyed of late years an uninterrupted period of peace and prosperity, it is a noticeable fact that this peninsula has not been in the ranks with other parts of the country in its development and advancement during this epoch. Much, no doubt, is due to its topographical situation and to the great want of facilities for periodical communication with other ports. As yet there are no telegraphs or cables existing, and it has happened at times that an entire month has elapsed without receiving news from the balance of the world.

Under such trying circumstances it is difficult for any country to make any progress. It is quite true that its agricultural resources are very limited, but there are other elements, such as mines, pearl fisheries, dyes of various kinds, etc., which offer inducements to enterprising people. The present settlers are, as a rule, little inclined to mining ventures, and, in fact, but few are acquainted with mining, which will undoubtedly later on constitute the wealth of this country.

As it is, in this immense territory of 8,709 square leagues there are but 21,000 inhabitants, of which, perhaps, about 1,000 are foreigners.

MINES AND MINING.

It is gratifying to note, nevertheless, that what few industries exist are in a prosperous state. The following is a statement of the mines now in operation :

The Boleo Company, situated at Santa Rosalia, about 200 miles from this port and about opposite the port of Guaymas, is controlled by parties in France. It has an immense plant of machinery for smelting great quantities of copper ore daily. The group of mines which furnish the ores seems to be very extensive and is connected with the works by railroad. For a long time after the commencement of operations by this company it met with severe reverses and heavy losses, caused by fires and floods principally and partly through mismanagement; but withal the mines proved themselves good, and the concern is now in a prosperous state. The company employs from 1,000 to 1,500 men constantly, and a town of considerable importance has suddenly sprung up in the vicinity.

The shipping at this place has now become very important, and during the last fiscal year it appeared in the Government statistics of customs as the third port in the Republic. This fact is attributed in a great measure to the circumstance that every necessary article for the maintenance of the place, as fuel, beef, produce of all kinds, materials for buildings, as well as all kinds of goods, have to be imported, as the country in that vicinity does

not produce anything whatever. The landing place is an open roadstead, and at times it is dangerous to vessels lying at anchor. During September last two foreign ships were driven ashore in a squall and lost.

The Angeles Bay Gold and Silver Mining Company is also in a prosperous condition, and, although now working on a small scale, it is capable of being extended.

The San Antonio mining district, in the southern part of the peninsula, is the location of the Progreso Mining Company, which is, without doubt, the most important in the territory. This company has in operation one of the most complete and perfect plants of machinery, and its silver mines are in splendid condition. The ores are not, as a rule, of very high grades, but this is compensated for by the abundance of the yield. This company is in a flourishing state, and, with the large force of men in its employment, it is a source of maintenance, for the most part, of this district. The San Antonio district is worthy of mention as a great silver-mining country, having a number of mines which might be worked to advantage.

The Mexican Mining Company, a newly formed corporation, is now working and prospecting some of these mines preparatory to introducing machinery. The results met with lately are very encouraging, and it is to be hoped that, after all these facts become better known to the public, immigration and capital will be finally induced to this district.

The shipments of bullion and ores from the above district to the United States during the last year were valued at \$606,280 in gold, while the imports of machinery, lumber, and provisions from the same source amounted to \$133,108.41.

A NEW DYE.

A new industry in the line of dyes is now becoming of considerable importance. Lower California has long been noted for the variety of dyes which it produces, such as orchilla weed, etc., but the torote tree bark, recently discovered, has come into great demand, and several large shiploads have been exported to Europe. As yet there seems to be but little demand for the article in the United States, although it is cheaper than orchilla and other dyes, producing in its natural state a dark red color, which is quite indelible. It is now collected and sold in this market at the price of \$1 to \$1.50 per 100 pounds, and the supply seems to be enormous.

SUGAR PLANTATIONS.

The sugar plantations existing in the agricultural towns of Santiago, Miraflores, Todos Santos, San José, and others have for years been considered as unprofitable to the owners on account of the unimportance of the local demand. The lands cultivated for this purpose are extremely productive, and the planters are now buoyant with hopes, owing to the fact that under the new American tariff they will readily find a reliable market in the United States for their sugar. Since the issue of said tariff, these lands have risen in price, and more fields are being prepared for the cultivation of sugar cane.

The lands so cultivated are irrigated from springs or running waters, and they are naturally few; but there are tracts of considerable size which could be made to produce other varieties of produce equally well if irrigated artificially, as it has already been proved, but as yet that kind of industry is not in existence.

THE FISHERIES.

The fisheries on this coast form another important resource. Fish of various species, seals, turtle, and pearl shell are to be found. So far the pearl shell, which is noted for producing the finest of pearls, is the only branch in this line which is sought after. It has never been systematically fished, and it is to be regretted that under the present mode, without regulations to govern the fishing of the same, the greater part of the small shell is destroyed to such an extent that the parties engaged in this business have been obliged to retire for 2 years in order to allow the shell time to reproduce itself.

A company at Magdalena Bay is now trying the experiment of canning the extract of turtle for shipment to England. If successful, this industry could be greatly extended, as the entire coast abounds with them.

Seal fishing or hunting is carried on in a limited manner at the head of the Gulf of California. The oil is principally consumed at the mines, and its price in this market is about 50 cents per gallon.

IMPORTS.

A statistical report of the imports from foreign countries in a district so little populated naturally shows very insignificant figures; but it can be stated that the bulk of the imports is from American markets and about one-fourth from European countries.

JAS. VIOSCA,
Consul.

UNITED STATES CONSULATE,
La Paz, January 18, 1891.

STEAMSHIP LINES FROM THE AMAZON.

REPORT BY CONSUL KERBEY, OF PARA.

The Amazon valley, generally known as North Brazil, comprises an area almost as extensive as that part of the United States east of the Rocky Mountains. It is probably the richest valley in natural and agricultural resources on the globe, extending on a line with the equator almost 2,000 miles due westward to the base of the Andes, in Peru and Bolivia.

Practically nothing is produced in this valley, because the gathering of the rubber is so much more profitable than anything else. Everything necessary to sustain civilized life is imported, principally from Europe. Two-thirds of the rubber exported goes to the United States; four-fifths of the imports are from Europe.

No. 126—8.

All parts of this valley may be reached by water communication. It is no exaggeration to state that the extent of the inland navigation amounts to 50,000 miles. Ocean steamers may ascend the Amazon for 2,000 miles to the very frontiers of Peru and Bolivia. There are no obstacles to free navigation. No American steamers ascend the Amazon above Para.

The enormous trade of this valley is being developed by English companies principally. The Amazon Company, which is a British local enterprise, confines its business to the river transportation. The Red Cross and Booth Steamship Companies (English) extend their commerce from Manaus, 1,000 miles up the Amazon, direct to Europe and the United States.

These English companies are well managed in the interests of shippers to and from North Brazil, Europe, and the United States. The two companies have been engaged in their exclusive trade with North Brazil for a number of years. They do not receive any subsidies from the English Government nor from the General Government of Brazil at Rio de Janeiro. The two companies have contracts with the State government of Amazonas, of which Manaus is the capital, entitling them to certain sums per year.

The Booth line, which extends from Manaus direct to New York via Para, is entitled to a subsidy of \$24,000. For this they are obliged to perform nine round-trip voyages a year between New York and Manaus until 1892; after that twelve voyages, or one per month, between Manaus and New York. They are also obliged to carry the mails, 3 tons of State cargo, and 3 first-class and 6 third-class governmental passengers free on each voyage. In addition to this they are required to carry all State cargo exceeding the above 3 tons at 20 per cent. reduction on the tariff rates. They are also obliged to maintain a fixed tariff of freight and passenger rates approved by the Government.

The steamers on contract voyages enjoy packet privileges, but pay all the taxes and port dues demanded in Brazil.

Substantially the same conditions are required in the contract with the Red Cross line, which extends from Manaus direct to Europe. The State governments pay no cash, but in settlement of any balances they tender what are known as "titulars," that are receivable for State dues.

It will be seen, therefore, that these "subventions," as the Englishmen call their subsidies, are not such as to enrich them; in fact, they sustain their lines principally by the good, hard cash freight rates paid by American shippers of rubber.

The freight rate on rubber from Para to New York is 25 cents and 5 per cent. prime per cubic foot delivered in New York. This is about equivalent to four-fifths of a cent per pound.

Unlike coffee and sugar from the lower provinces, crude rubber is a safe freight, that is, it is not liable to any sea damage in transportation, and the rates charged are out of all proportion to the values and risk. A rough box containing rubber measures $11\frac{3}{4}$ cubic feet in smaller sizes or 24 cubic feet for larger size. These can be safely and securely stowed and make what is known as good, solid cargo, as they pack well.

There is sufficient business now from the Amazon to require all of the ten steamers each of the Booth and Red Cross lines in addition to the four American steamers which call at Para at irregular intervals en route from the south to New York.

What Para and the Amazon require is more frequent and regular ocean communication with our country, and there seems to be sufficient business to sustain this demand.

JOSEPH O. KERBEY,
Consul.

UNITED STATES CONSULATE,
Para, January 31, 1891.

COMMERCE AND INDUSTRIES OF VERA CRUZ.

REPORT BY CONSUL HOFF.

INDUSTRIES.

There has been started here three soap factories during the past year, and they are all doing a thriving business. Now that the right to move from one State or county to another has been granted without paying duties, manufactures should increase, as such duties used to be a great hindrance to manufactures of any kind.

TRADE.

The exports from here to the United States for the year 1890 are nearly the same as for the previous year, the gain being only \$5,628.80, but at the same time there is a great deal more tonnage to this port.

SHIPPING.

The tonnage, flag, and class of vessels entering and leaving this port of Vera Cruz is hereto annexed and tabulated. The whole number of tons entering and clearing from this port was 473,704, of which the United States had 113,809; Great Britain, 109,051; Spain, 132,000; France, 68,000; and Germany, 48,009. There were of American steamers 67, and sailing vessels 23; Great Britain had 77 steamers, and France and Germany had 50. Of all these steamers and sailing vessels, 198 out of 295 went from here to the United States, making two-thirds of all their commerce. Whilst last year there went from here 182,427 tons to the United States, this year there went 315,802 tons.

RAILROADS.

The Interoceanic Railway, 3-foot gauge, will start from the port of Vera Cruz, on the Gulf of Mexico, and will run to Acapulco, on the Pacific, with a branch to the Tierra Caliente, at a point called Amacuzac. The total distance between Vera Cruz and Acapulco will be 872 kilometres (542 miles). At present the railway is completed and opened from Mexico to Jalapa and is in course of construction between Vera Cruz and Jalapa; this will be

finished within 3 months. On the Pacific side of the country the line is completed and opened from Mexico to the town of Jojutla, a distance of 200 kilometres (24 miles), and from Puebla to the town of Chutla, a distance of 106 kilometres (66 miles); from this point to Acapulco the work is not yet commenced, but will be started shortly. The unconstructed portion to Acapulco is about 380 kilometres (236 miles).

HARBOR.

The harbor works progress as well as can be expected. They have placed in the structure 228,240 tons of stone (made of cement and sand), and have 39,000 tons more ready to continue the work as soon as they get the derrick completed that is now being built in order to place the large 30-ton stones on the top of the present structure, which is near the top of the water the whole length of the line. They have got a great quantity of natural stone from off the reefs and from the mountains to fill in on the back, or north, side of the mole as a sort of breakwater to keep the sea from the mole in heavy storms or northers. The mole, when completed, will be 97½ feet wide, 4,973 feet long, and part of it 50 feet below tide level; and the north sea wall will be 20 feet above the tide level, and is expected to be finished in 1893, and will then be the only good harbor on the Gulf of Mexico.

Table showing the navigation of the port of Vera Cruz, Mexico, for the year ended December 31, 1890.

Flag.	From—	Entered.					
		Steamers.		Sailing vessels.		Total.	
		No.	Tons.	No.	Tons.	No.	Tons.
United States.....	United States.....	67	109,728	23	4,081	90	113,809
British.....	Europe and United States..	77	109,051			77	109,051
French.....	.....do.....	29	67,321	2	734	31	68,055
German.....	.....do.....	21	38,552	5	1,457	26	40,009
Spanish.....	.....do.....	45	132,000			45	132,000
Norwegian and Swedish...	.....do.....	7	4,678	19	6,102	26	10,780
Total.....		246	461,330	49	12,374	295	473,704

Flag.	To—	Cleared.					
		Steamers.		Sailing vessels.		Total.	
		No.	Tons.	No.	Tons.	No.	Tons.
United States.....	United States.....	67	109,728	23	4,081	90	113,809
British.....	Europe and United States..	77	109,051			77	109,051
French.....	.....do.....	29	67,321	2	734	31	68,055
German.....	.....do.....	21	38,552	5	1,457	26	40,009
Spanish.....	.....do.....	45	132,000			45	132,000
Norwegian and Swedish...	.....do.....	7	4,678	19	6,102	26	10,780
Total.....		246	461,330	49	12,374	295	473,704

Table showing the declared value of exports from the central district of Vera Cruz to the United States during the year ended December 31, 1890, in United States gold.

Articles.	Value.	Articles.	Value.
Asphaltum	\$1,985.40	Marble.....	\$100,786.26
Broom root.....	66,868.22	Merchandise.....	31,322.97
Beans.....	25,285.50	Rubber.....	11,195.90
Cigars.....	17,977.22	Silver ore.....	83,565.17
Coffee.....	3,394,670.49	Tobacco.....	124,616.41
Chicle.....	43,759.15	Vanilla.....	46,831.79
Deerskins.....	2,976.96	Total.....	4,333,027.97
Fustic.....	29,540.05	Total for preceding year.....	4,227,399.17
Goatskins.....	236,208.85	Increase.....	5,628.80
Hides.....	110,425.99		
Jalap.....	5,011.58		

JOSEPH D. HOFF,
Consul.

UNITED STATES CONSULATE,
Vera Cruz, January 21, 1891.

SWISS EXPORTS TO THE UNITED STATES.

REPORT BY VICE-CONSUL-GENERAL HINNEN, OF BERNE.

I have the honor to submit herewith a tabular statement of the exports from Switzerland to the United States during the year ended December 31, 1890, as shown by the reports received from the several consulates, with the increase or decrease for each consulate as compared with the year 1889, indicated:

Consulates.	1889.	1890.	Increase or decrease.
Basle.....	\$3,534,533	\$4,510,757	+ \$976,224
Berne.....	930,627	1,041,468	+ 110,841
Geneva.....	901,430	1,036,467	+ 135,037
Horgen.....	1,512,105	1,448,843	- 63,262
St. Gall.....	6,525,497	7,851,498	+ 1,325,995
Zurich.....	1,430,047	1,850,475	+ 420,428
Total.....	14,834,239	17,739,502	+ 2,905,263

Inquiries made at the different consulates in Switzerland as to the effects of the new tariff laws on exportation have elicited the following answers:

BASLE.

The present tariff laws have not affected unfavorably the course of exportation from this consular district. The chief articles of export, silk ribbons and watches, pay no higher duties than under the law of 1883. In fact, no important article shipped from Basle has to suffer from the new bill. The only important change the severe requirements of the administrative bill have made resulted that exporters who formerly made large consignments avoid, so far as possible, this kind of business and sell their merchandise directly to the importer. This is decidedly a change for the better so far as it goes.

BERNE.

The exports from this district, of which cheese is the most important article, show a slight decrease since October last, partly due to the higher duty (from 4 to 6 cents per pound) paid thereon, and partly to the very high market price of the goods; but prospects are existing that the export will improve again in a few months.

GENEVA.

Exports from this consular district have about doubled since the passage of the McKinley bill.

HORGEN.

As the duty on silks is unchanged, it is only the customs administrative act of June 10 which seriously affects the shippers here. Subsequently to that date large quantities of goods were hurried forward to escape the new regulations, so that it was only during the last 6 weeks or 2 months that the effect of the McKinley bill has become apparent. Several large firms have entirely abandoned the American trade; others have greatly reduced their shipments. This decrease, however, is partly due to other causes in action for several years past.

ST. GALL.

The new bill has been in operation so short a time that it is impossible to say that it has as yet had a further effect than to make everyone here anxious to ship and get their goods entered previous to October 6th last, thus bringing about a natural decrease in the next succeeding months.

ZURICH.

Since the passage of the new tariff laws, which, however, made no change in silks, shipments from here have been going on livelier than ever. It is certainly clear that, so far as this consular district is concerned, no hindrance has been caused by the new tariff. There were at first some cases of friction caused by the absence of detailed instructions regarding the manner of applying certain requirements of the administrative bill, but everything is working smoothly now, and I can not see that any honest man has sustained any damage by the workings of the new régime.

JOHN E. HINNEN,
Vice-Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berne, January 13, 1891.

GLASS INDUSTRY OF GERMANY.

TRANSLATED AND TRANSMITTED BY CONSUL-GENERAL EDWARDS, OF BERLIN.

[From the Berlin Börsen Zeitung of January 16, 1891.]

From industrial circles we receive the following information: In view of the German-Austrian tariff negotiations now in progress, it is well to throw light on the glass industry of both countries. If we first look at the Austrian, and especially the Bohemian, glass industry, we find that at the beginning of 1880 it suffered a decline in the extent of its selling district. Until then, for Bohemian articles England was the chief taker, the United States buying the largest amounts in cheap wares. On account of disquiet in the colonies and the languishing general condition of trade, business fell off so that the north Bohemian factories were much cramped. This severe blow was partially the fault of the manufacturers themselves by their manner of doing business. So soon as a buyer allowed himself to be seen, he was completely overflowed with offers. Under such circumstances one can not blame the buyer for choosing the lowest prices. For example, instead of moderately expensive colored glass, the manufac-

turer took colorless glass, colored it with aniline colors, and painted thereon "in the cold" the flowers of the most beautiful sorts. These wares came to America and were placed in store windows. Very quickly the sun took the color out of the exposed side, while the other side retained a part of its original beauty. Under such circumstances the confidence of the transatlantic buyers was lost. They held back in making purchases and tried first to free their stocks from the doubtful articles. Formerly the Bohemian industry had a good reputation, but it was unable to recover from this injury. The McKinley bill was also injurious, as the United States, as chief buyer, has revolted from the cheap Bohemian articles and now prefers the better German, French, and English wares. Furthermore, Bohemia has now a hard battle to fight out with its workmen. The formerly very badly paid workmen have formed a union, and this (the entire industry is housework) is now dictating conditions to the manufacturers, which will further cramp the industry. By the German customs tariff of 1885 Bohemia received a blow, to parry which everything imaginable has been tried. For 5 years petition after petition has been made, and the north Bohemian manufacturers have used every effort to have the customs restrictions between the two Empires removed. Recently, also, at the negotiations in Vienna the glass industry has demanded customs modifications for Bohemian wares. With us the glass manufacturers have not yet been heard. A modification of the duties on glass would seriously injure the German industry. Our industry is still in a state of development, and already has shown itself capable of producing articles which were formerly imported from Bohemia. But, nevertheless, large quantities are still imported into Germany which can be very well manufactured by us and in exactly the same quality. This applies specially to mass articles, as in finer articles Bohemia has lost its lead. For the moment Germany is not in position to cover, *e. g.*, its demand for wineglasses. The importation from France and Belgium is very important, notwithstanding that these wares have very doubtful value. Belgian and French crystal glass, when struck, gives a very good sound, and this helps their sale materially. In use, however, there is a great objection—the glasses break very easily, owing to the cooling method used in their manufacture. In general our glass industry has now good business prospects, but it can not afford to lose the benefit of protective duty.

ARTESIAN WELLS IN NICARAGUA.

REPORT BY CONSUL NEWELL, OF MANAGUA.

Not very long ago a new industry was introduced into Nicaragua—the boring of artesian wells. Although those wells are much needed in this Republic and, in fact, in many other of the Central American states, the enterprise met with little or no support, as the citizens here are very backward to invest money in a new industry. On that account a leading merchant of Leon, long a resident in Central America, who had secured the exclusive privilege for boring these wells, found it difficult to interest anyone in the matter. Before putting the plan in thorough working order, many obstacles had to be surmounted, but finally they were successful.

The company has bored four or five wells, finding water in all of them; none of them, however, are flowing wells. In some of these wells they have placed powerful pumps to raise the water from 700 to 800 feet to the surface.

These wells furnish good drinking water to the small towns of Jinetepe and Diriamba, where the people before the establishment of these wells had only brackish, stagnant water collected in pools during the rainy season for drinking. The water is sold at the rate of one-fourth of a cent per gallon.

The strata through which these wells were bored consisted chiefly of hardened lava and volcanic sand, the latter rather a difficult matter to deal with; also, very hard rock, layers of sand with pebbles, and strata of bluish clay were met with.

Two of these wells, I am informed, give a gross income of \$19,000 per year, from which sum \$7,000 has to be deducted for working expenses, leaving net profits, excluding accidents, of \$12,000. This is a very nice dividend on an estimated capital of \$72,000, at which sum the company's plant has been valued.

The usefulness of bored wells to this Republic can not be calculated. Every year thousands of head of cattle die for want of water. Many of the cattle estates rely upon the rainy season to fill the creeks and the low places with water for their supply, but during the last 8 or 10 years rains have not been so copious as in former times, and therefore this scarcity of water and natural consequences.

Agriculturists in general, and coffee-planters especially, suffer much for water. Only very few coffee-planters have water sufficient to wash their coffee, and washed coffee brings always from 3 to 4 cents more in the market than unwashed.

WILLIAM NEWELL,
Consul.

UNITED STATES CONSULATE,
Managua, January 9, 1891.

OPENING OF THE VERRUGAS BRIDGE.

REPORT BY CONSUL DAUGHERTY, OF CALLAO.

I have the honor to report that on Sunday, the 4th instant, the famous Verrugas bridge, on the Oroya Railroad, about 80 miles from Lima, was publicly opened to traffic in the presence of three hundred invited guests from Lima and Callao and other parts of Peru. The report of the proceedings did not appear in the official paper until this morning, and, as steamers now leave on Tuesday at 10 a. m., instead of 5 p. m. as formerly, I am unable to send you a translation. I will forward, however, by next mail.

It is confidently believed that the reopening of traffic on this road will greatly improve trade at this port. There are large accumulations of ore between the bridge and the terminus, and I am reliably informed that the transportation of ores alone will employ the rolling stock for many months.

A still more important feature of the reopening of traffic is the fact that the accumulated material for the extension of the road, which has been lying at Callao for so long a time, will now be hurried forward and the extension be pushed with renewed vigor.

A. J. DAUGHERTY,
Consul.

UNITED STATES CONSULATE,
Callao, January 6, 1891.

OUR COMMERCIAL POSSIBILITIES WITH SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

Every day I become more and more convinced that the United States and Spain can each be benefited by closer commercial relations, and I believe that everyone acquainted with the resources and conditions of the two countries entertains the same opinion.

In investigating the opportunities for trade with Spain, importers and exporters should bear in mind that this country is the fatherland of all the Spanish Americas, and that the business preparations necessary to strengthen commercial relations with these countries of the New World can be just as effectively applied here. Language, customs, and, in some instances, distance are the same.

It is not my intention to comment on the résumé inclosed, but I desire to repeat what I have said in other reports, viz, that the United States should send to Spain larger amounts of breadstuffs and meats. Under proper commercial regulations this can be easily done, and that is not all, for I am sure that American inventive genius can find in Spain a market free from serious competition for its products. The wheat imported into Spain during 1889 amounted to 145,312,334 kilogrammes, valued at 26,156,220 pesetas.* In 1890 it reached 161,387,780 kilogrammes, valued at 29,049,853 pesetas. The exports for the same periods were 162,354 kilogrammes, valued at 29,223 pesetas.

The imports of wheat flour for 1889 were 30,653,789 kilogrammes, valued at 9,196,139 pesetas, and for 1890 the amount was 25,485,659 kilogrammes, valued at 7,645,698 pesetas. The exports for the same periods were 23,896,168 kilogrammes, valued at 7,486,773 pesetas, and 31,643,416 kilogrammes, valued at 10,125,893 pesetas.

It will be seen by the foregoing figures that in the 2 years cited Spain bought wheat and wheat flour to the value of 72,047,910 pesetas and sold to the value of 17,767,784 pesetas, thus leaving a net balance against the nation on these two articles amounting to 54,280,162 pesetas.

In the United States I have seen thousands of bushels of grain (corn) wasting in fields and being burned for fuel, and in Spain I have seen small boys in great danger of being killed or crippled as they darted in and out among carts and horses picking kernels of wheat, corn, and peas that scattered one by one from the sacks with which the carts were loaded.

It would seem that the people of two countries where such opposite values are placed on commodities, that in the one life is risked to obtain what in the other is wasted or burned, might be mutually benefited by closer commercial relations.

* 1 peseta = 19.3 cents.

Table showing the quantity and value of imports into Spain during the years 1889 and 1890, according to tariff classification.

[1 peseta= 19.3 cents.]

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 1.—Stones, lime, minerals, glassware, and earthenware.</i>				
Marble and jasper:			<i>Pesetas.</i>	<i>Pesetas.</i>
Rough, cut in pieces.....kilogrammes...	2,338,471	3,281,276	210,461	295,315
All other forms.....do.....	4,727,027	4,030,831	661,783	564,316
Other stones and earths.....do.....	60,408,041	82,916,104	2,718,362	3,731,225
Coal (mineral).....tons.....	1,335,809	1,440,174	33,395,222	36,004,330
Coke.....do.....	279,144	276,814	6,978,591	6,900,330
Tar, pitch, asphalt, etc.....kilogrammes...	24,951,794	20,991,621	2,495,179	2,999,260
Petroleum:				
Raw.....do.....	33,243,184	50,691,461	7,978,363	12,165,951
Refined.....do.....	3,027,484	2,567,102	787,146	667,446
Other mineral oils:				
Raw.....do.....	1,108,680	1,771,211	266,083	425,091
Refined.....do.....	219,015	337,732	56,943	87,810
Vaseline, etc.....do.....	809,145	2,591,721	194,194	632,013
Benzine and gasoline.....do.....	161,213	230,356	41,915	59,893
Minerals.....tons.....	13,171	4,565	263,411	91,300
Glassware (common).....kilogrammes...	4,028,802	4,229,779	1,208,640	1,268,934
Crystals and their imitations.....do.....	1,147,138	1,133,312	2,950,134	1,986,630
Window glass.....do.....	2,429,411	2,109,746	1,943,528	1,687,797
Mirrors.....do.....	69,320	53,585	221,824	172,472
Bricks, tiles, etc.....do.....	22,308,437	33,611,766	1,561,591	2,352,824
Tiles of stone and of fine clays.....do.....	839,300	859,278	1,216,985	1,245,953
Porcelain.....do.....	464,680	419,967	1,161,700	1,049,917
Total.....			65,312,055	74,348,749
<i>Class 2.—Metals and their manufactures.</i>				
Iron:				
Cast (ingots) and old.....kilogrammes...	27,936,448	34,324,365	1,955,551	2,402,706
Tubes of all classes.....do.....	7,235,029	9,428,849	1,085,254	1,414,397
Manufactured—				
Common.....do.....	4,212,626	5,547,225	1,611,030	1,331,334
Fine.....do.....	1,237,075	1,224,618	816,468	808,248
Wrought and steel rails.....do.....	27,279,020	38,272,754	4,091,853	5,740,913
Sheets—				
Above 6 millimetres in thickness.....do.....	3,376,747	3,789,689	675,349	752,938
Up to 6 millimetres thick, and bars.....do.....	19,194,346	19,709,733	4,606,643	4,730,337
In large pieces.....do.....	1,065,132	7,497,875	589,539	2,249,361
Wire.....do.....	4,172,374	5,026,153	1,460,331	1,799,154
Nails and screws.....do.....	4,770,657	4,481,807	2,719,274	2,554,664
Tubes.....do.....	3,199,359	3,958,747	991,801	1,227,212
Wrought and steel manufactures.....do.....	7,725,235	8,222,692	6,180,188	6,578,154
Tin:				
Sheets.....do.....	4,538,459	2,952,700	2,359,999	1,535,404
Ingots.....do.....	494,220	582,435	1,235,551	2,456,087
Copper of first melting and old.....do.....	94,113	145,463	141,170	218,194
Copper and brass:				
Bars and ingots.....do.....	260,569	446,274	334,166	914,861
Sheets, nails, etc.....do.....	601,173	1,546,624	1,382,698	3,550,335
Tubes and large pieces.....do.....	247,378	276,905	655,551	633,798
Copper, bronze, and brass manufactures.....do.....	408,589	385,852	1,634,356	1,543,408
Total.....			34,126,772	42,406,436

Table showing the quantity and value of imports into Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 3.—Drugs and chemical products.</i>				
Palm, cocoa, and other solid oils.....kilogrammes...	10,834,228	11,534,851	6,825,564	7,266,956
All other vegetable oils.....do.....	730,594	1,935,834	438,357	1,101,500
Roots for dyeing and tanning barks.....do.....	1,404,730	2,120,417	280,946	424,083
Oleaginous seeds.....do.....	5,174,681	6,969,865	1,500,658	2,021,261
Other vegetable products.....do.....	3,029,721	1,801,199	3,787,151	2,251,499
Indigo and cochineal.....do.....	257,988	222,153	3,044,258	2,621,405
Extracts for dyeing.....do.....	2,249,855	2,438,957	2,204,857	2,386,162
Varnishes.....do.....	367,212	392,774	734,424	785,548
Leads :				
Powdered or in <i>terron</i>.....do.....	1,804,448	2,146,544	355,335	1,609,908
Prepared and tinted.....do.....	491,739	458,529	737,808	687,794
Imitations.....do.....	283,943	177,930	2,555,487	1,601,370
Acids :				
Muriatic.....do.....	1,128,404	1,571,881	135,408	188,626
Nitric.....do.....	60,376	89,938	31,395	46,768
Sulphuric.....do.....	371,170	235,462	51,963	32,965
Sulphur.....do.....	7,478,702	12,058,755	972,232	1,567,638
Alkaloids and their salts.....do.....	883	1,010	132,450	151,500
Alum.....do.....	1,048,086	1,013,477	167,694	162,156
Carbonates, alkaline.....do.....	21,451,210	22,093,974	4,290,241	4,418,795
Chloride of lime.....do.....	3,481,458	4,036,228	905,180	1,049,419
Potassium, soda, etc.....do.....	1,951,263	1,534,952	195,126	153,495
Salt (common).....do.....	675,581	652,467	13,511	13,049
Glue and albumen.....do.....	752,748	739,917	752,748	739,817
Phosphorus.....do.....	48,176	58,776	289,056	352,656
Nitrate of potash.....do.....	1,169,194	1,307,487	643,057	719,118
Nitrate of soda.....do.....	12,080,775	14,055,878	3,324,233	4,216,763
Pharmaceutical products.....do.....	252,029	222,289	1,260,145	1,101,445
Unclassified chemical products.....do.....	4,131,100	3,569,542	4,131,100	3,569,542
Starch.....do.....	2,049,122	2,275,827	1,083,915	1,206,188
Compounded and chemical foods.....do.....	8,434,609	10,617,536	2,530,383	3,185,261
Paraffine, stearine, etc., in bulk.....do.....	1,632,026	1,761,385	2,203,235	2,377,870
Manufactured.....do.....	370,649	252,699	611,571	416,887
Perfumery and essences.....do.....	151,822	135,117	1,215,136	1,080,936
Total.....			48,702,424	49,518,480
<i>Class 4.—Cotton and its manufactures.</i>				
Raw cotton.....kilogrammes...	63,690,882	49,837,623	89,167,234	69,772,672
Thread :				
Up to 35.....do.....	208,372	143,922	458,417	316,628
Above 36.....do.....	94,146	59,266	329,511	207,431
Twist, of three or more threads.....do.....	266,675	285,581	1,866,775	1,999,067
Textures :				
Up to 25 threads.....do.....	986,260	997,390	5,113,970	5,175,002
Above 26 threads.....do.....	34,026	37,840	276,552	310,358
Stamped—				
Up to 25 threads.....do.....	554,627	498,443	4,166,608	4,755,402
Above 26 threads.....do.....	4,576	1,299	39,330	11,188
Diaphanous-like muslin.....do.....	87,715	91,799	813,275	857,640
Piques.....do.....	51,947	46,372	423,084	380,164
Velvets and double textures.....do.....	71,998	66,035	654,689	600,696
Tuiles.....do.....	27,744	21,873	364,020	185,528
Narrow lace, except crocheted.....do.....	21,165	14,564	509,088	350,124
Knit goods, crocheted.....do.....	49,057	32,510	445,155	295,682
Hosiery, etc.....do.....	61,750	67,799	437,366	479,700
Socks and underwear.....do.....	84,523	76,727	677,408	626,014
Total.....			105,742,438	86,323,296

Table showing the quantity and value of imports into Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 5.—Other vegetable fibers and their manufactures.</i>				
Hemp (raw).....kilogrammes...	3,292,202	5,217,702	4,604,216	4,539,400
Flax (raw).....do.....	115,406	70,287	113,098	68,881
Jute and manilla grass (raw).....do.....	9,699,524	10,975,757	4,558,776	5,158,606
Hemp or flax yarns.....do.....	3,824,044	3,557,767	14,722,569	13,697,403
Jute and manilla grass yarns.....do.....	4,287,633	5,575,374	3,215,728	4,181,531
Thread textures:			<i>Pesetas.</i>	<i>Pesetas.</i>
Plain (10 threads).....do.....	20,710	21,810	83,882	90,627
From 11 to 24 threads.....do.....	171,796	163,043	2,193,921	2,117,523
From 25 threads upwards.....do.....	11,805	9,765	275,545	187,362
Crossed and labored.....do.....	86,703	91,289	894,569	940,538
Laces.....do.....	1,137	1,179	290,625	295,375
Knit textures.....do.....	683	295	17,075	7,387
Jute and Spanish grass textures.....do.....	261,642	279,689	532,011	563,937
Crossed and labored.....do.....	178,058	218,287	903,195	1,123,519
Total.....do.....			32,405,210	32,972,289
<i>Class 6.—Wool, hairs, and their manufactures.</i>				
Bristles and hairs (raw).....kilogrammes...	239,693	199,044	862,893	716,558
Wool:				
Unwashed.....do.....	130,814	340,600	313,953	817,440
Washed.....do.....	1,255,467	1,416,472	6,006,242	6,799,066
Combed or carded.....do.....	480,629	391,651	2,595,396	2,124,915
Yarn:				
Dirty.....do.....	5,109	344	34,486	2,322
Clean.....do.....	76,941	51,697	750,174	504,046
Dyed.....do.....	51,957	31,808	584,516	357,840
Carpets.....do.....	422,331	451,997	1,648,122	1,762,788
Felts.....do.....	196,580	204,960	720,531	749,029
Blankets.....do.....	9,449	5,446	76,992	43,928
Knit textures.....do.....	321,805	233,537	5,413,228	4,062,380
Woolen cloth:				
Pure.....do.....	353,831	280,940	6,827,924	5,439,024
Mixed with cotton.....do.....	140,854	103,358	1,584,200	1,166,663
Other textures:				
Pure wool.....do.....	625,635	458,543	10,569,399	7,821,856
Mixed with cotton.....do.....	536,845	503,834	5,437,120	5,151,388
Total.....do.....			43,445,236	37,499,273
<i>Class 7.—Silk and its manufactures.</i>				
Silk:				
Raw.....kilogrammes...	113,818	113,625	4,632,720	4,545,000
Twisted.....do.....	3,068	2,423	184,080	145,380
Floss silk:				
Combed.....do.....	1,202	1,118	24,040	22,360
Thread, untwisted.....do.....	13,080	16,585	340,080	431,210
Twisted.....do.....	26,141	28,578	1,071,781	1,171,698
Silk textures, pure.....do.....	60,730	35,474	6,311,990	4,787,430
Plushes, etc., of pure silk.....do.....	2,656	1,666	402,159	258,281
Textures of raw and silk floss.....do.....	16,168	11,249	863,109	599,724
Tulles, laces, and crocheted silk.....do.....	14,972	10,391	2,045,284	1,432,080
Knit silk.....do.....	3,720	3,001	269,532	217,098
Velvet and plushes mixed with cotton.....do.....	28,488	23,060	1,569,672	1,269,425
Other textures of silk:				
Mixed with cotton.....do.....	138,789	99,794	4,367,490	2,640,340
Mixed with wool.....do.....	21,722	12,168	663,772	378,495
Total.....do.....			22,745,709	17,898,521

Table showing the quantity and value of imports into Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 8.—Paper and its manufactures.</i>				
Printing paper.....kilogrammes	3,078,411	1,525,817	2,000,967	991,781
Lithographing and engraving.....do	853,369	743,191	1,152,048	1,003,308
Ruled paper (handmade).....do	298,268	284,448	596,536	568,896
Books :				
Printed in Spanish.....do	122,854	110,139	411,561	368,966
Printed in foreign languages.....do	164,740	164,404	494,220	493,212
Maps, engraving, and designs.....do	85,062	65,895	2,126,550	1,647,375
Paper stamped with gold, etc.....do	33,218	53,785	166,090	268,925
Other classes.....do	249,137	302,896	498,274	605,792
Brown.....do	1,529,534	1,733,956	963,606	1,092,392
Unclassified.....do	225,085	241,595	675,255	724,785
Total.....			9,085,107	7,765,432
<i>Class 9.—Lumber and its manufactures.</i>				
Staves.....M	15,853	14,899	15,060,350	14,154,379
Lumber :				
Deals, plank, and heavy.....metres	566,300	579,770	30,013,900	30,727,810
Fine.....kilogrammes	2,340,065	3,137,848	772,221	1,035,490
Board.....do	179,925	190,759	100,758	84,495
Casks, finished or unfinished.....do	1,289,235	1,229,829	541,478	516,538
Manufactured—				
Common.....do	2,368,421	2,215,432	4,736,842	4,430,864
Fine.....do	783,137	798,147	1,762,058	1,795,830
Gilded objects.....do	161,029	162,318	901,762	908,981
Spanish grass, sea grass, etc.....do	11,429,623	6,074,260	2,057,332	971,882
Paste for manufacturing paper.....do		6,495,396		1,039,263
Total.....			55,946,701	55,665,452
<i>Class 10.—Animals and their products.</i>				
Geldings.....number	230	227	207,000	204,300
Other horses.....do	3,388	1,977	2,286,900	1,334,475
Mules.....do	10,396	8,243	4,158,400	3,297,200
Asses.....do	718	480	43,080	28,800
Cattle.....do	11,219	17,283	2,243,800	3,456,600
Swine.....do	35,173	8,083	3,517,300	808,300
Sheep and goats.....do	54,342	66,450	652,104	797,400
Hides.....kilogrammes	8,322,227	7,807,563	12,731,675	12,882,479
Patent leather.....do	121,741	88,303	2,191,338	1,589,504
Other leather (tanned).....do	191,690	187,553	1,916,900	1,875,530
Belts for machinery.....do	53,925	67,996	485,325	611,964
Animal grease.....do	10,224,554	14,145,755	7,668,415	10,609,316
Fertilizers.....do	36,582,210	46,890,925	9,145,553	11,722,731
Total.....			48,247,790	49,218,599
<i>Class 11.—Machinery, carriages, and vessels.</i>				
Machinery :				
Agricultural.....kilogrammes	756,242	908,997	680,618	818,097
Motory.....do	6,709,917	9,306,687	8,051,900	11,168,024
Copper.....do	229,507	213,747	883,602	822,926
Other material.....do	18,925,855	21,764,159	24,035,836	27,640,482
Carriages :				
4-seated berlines or coaches.....number	12	18	48,000	72,000
2-seated berlines.....do	32	20	89,600	56,000
2 or 4 wheels (other styles).....do	74	64	92,500	80,000
Railway carriages.....kilogrammes	60,438	1,013,431	107,393	1,094,505
Other kinds of railway carriages.....do	1,128,896	5,826,072	804,448	2,913,036

Table showing the quantity and value of imports into Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 11.—Machinery, carriages, and vessels—Cont'd.</i>				
Carts.....kilogrammes...	1,952,773	1,741,690	781,109	696,675
Vessels:				
Wooden—				
Up to 50 tons.....number...	31	24		
Do.....tons...	453,183	112,381	117,465	29,129
From 51 to 300 tons.....number...	3	2		
Do.....tons...	1,140,640	161,125	295,654	41,764
Over 300 tons.....number...	2	5		
Do.....tons...	1,122,030	3,572,123	290,830	925,894
Iron and steel.....number...	28	23		
Do.....tons...	28,761,190	17,677,121	9,347,373	5,745,064
Total.....			45,626,328	58,203,997
<i>Class 12.—Grain and food.</i>				
Fowls and small game.....kilogrammes...	2,509,948	1,834,772	5,019,896	3,669,544
Salt and smoked meat.....do.....	200,817	206,202	116,473	171,797
Pork and lard.....do.....	6,383,829	9,356,051	7,341,402	10,759,459
Other kinds of meat.....do.....	30,777	23,347	29,237	22,110
Butter.....do.....	222,400	277,670	822,880	1,027,379
Fish:				
Cod.....do.....	43,548,185	47,395,053	27,435,356	29,858,685
Fresh.....do.....	3,100,226	4,189,865	682,048	921,770
Smoked.....do.....	171,286	81,910	94,206	45,090
Rice (clean).....do.....	5,945,348	2,496,161	1,664,697	698,922
Wheat:				
From the United States.....do.....	1,093,437	1,049,557	196,818	188,922
From France.....do.....	4,141,629	16,398,014	745,494	2,951,643
From Russia.....do.....	87,306,313	107,511,117	15,715,136	19,352,001
From Turkey.....do.....	35,175,808	21,572,269	6,331,645	3,883,008
From other countries.....do.....	17,995,147	14,856,823	3,167,127	2,674,281
Total.....do.....	145,312,334	161,387,780	26,156,220	29,049,853
Wheat flour:				
From Germany.....do.....	262,935	74,244	78,881	22,273
From Austria.....do.....	317,139	117,020	95,142	35,106
From Belgium.....do.....	1,073,421	317,612	322,026	95,254
From France.....do.....	28,349,299	24,253,321	8,504,790	7,752,998
From other countries.....do.....	651,004	723,462	195,300	217,020
Total.....do.....	30,653,798	25,485,659	9,196,139	7,645,698
All other cereals:				
From France.....do.....	3,574,245	15,400,394	428,910	1,848,047
From Morocco.....do.....	9,849,181	12,024,454	1,181,901	1,442,934
From Roumania.....do.....	5,028,924	7,039,883	603,471	844,786
From Russia.....do.....	4,865,260	24,810,634	583,831	2,977,276
From Turkey.....do.....	5,442,161	3,081,293	653,059	369,755
From other countries.....do.....	25,985,038	64,351,549	3,118,205	7,722,136
Total.....do.....	54,744,809	126,708,207	6,569,377	15,204,964
Flour of above cereals.....do.....	103,325	96,834	23,764	22,272
Dried vegetables.....do.....	34,670,477	39,324,827	8,320,914	9,437,958
Sugar:				
From Cuba.....do.....	35,436,602	51,968,260	23,033,792	33,779,769
From Porto Rico.....do.....	12,606,290	20,132,219	8,194,083	13,085,941
From Philippine Islands.....do.....	5,840,790	3,273,319	3,796,514	2,127,657

Table showing the quantity and value of imports into Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 12.—Grain and food—Continued.</i>				
Sugar—Continued.			<i>Pescetas.</i>	<i>Pescetas.</i>
From France.....kilogrammes...	129,799	75,778	90,859	53,045
From other countries.....do.....	575,666	776,091	402,966	543,264
Total.....do.....	54,589,147	76,225,667	35,518,219	49,589,277
Caracas cocoa:				
From Venezuela.....do.....	1,211,138	1,325,016	2,543,390	2,782,534
From other countries.....do.....	13,803	186,784	28,986	392,246
Total.....do.....	1,224,941	1,511,800	2,572,376	3,174,780
Guayaquil cocoa:				
From Cuba.....do.....	1,070,407	1,519,899	1,980,253	3,011,804
From Porto Rico.....do.....	75,126	97,448	138,983	180,279
From Philippine Islands.....do.....	7,972	792	14,748	1,465
From Ecuador.....do.....	3,603,688	2,584,577	7,207,376	5,633,370
From other countries.....do.....	469,707	1,573,176	939,414	3,146,352
Total.....do.....	5,226,900	5,715,892	10,280,774	11,973,270
Coffee:				
From Cuba.....do.....	162,239	100,122	332,590	205,250
From Porto Rico.....do.....	2,543,828	3,496,452	5,214,847	7,167,726
From Philippine Islands.....do.....	1,939,627	1,781,771	3,976,235	3,652,631
From Arabia.....do.....	45,554		95,663	
From Mexico.....do.....	30,076	2,287	63,160	4,793
From other countries.....do.....	64,155	145,048	134,724	304,601
Total.....do.....	4,785,479	5,525,680	9,817,219	11,335,001
Cinnamon.....do.....	261,339	208,910	1,097,624	877,422
Other kinds.....do.....	88,344	125,213	97,178	137,734
Pepper.....do.....	515,793	473,377	928,427	852,079
Tea.....do.....	88,112	91,124	198,252	205,029
Spirits:				
From Cuba.....hectolitres...	25,362	45,299	887,668	1,585,465
From Porto Rico.....do.....	60	1,318	2,107	46,130
From Philippine Islands.....do.....	3		103	
From Germany.....do.....	231,995	360,010	9,277,017	14,400,400
From France.....do.....	4,465	7,536	178,580	301,440
From Sweden.....do.....	84,168	174,564	3,566,708	6,982,560
From other countries.....do.....	19,284	13,357	771,360	534,280
Total.....do.....	365,267	602,084	14,483,547	23,850,275
Champagne.....do.....	2,066	2,125	1,047,980	1,062,500
Other kinds.....do.....	21,800	14,953	3,269,947	2,242,950
Preserved foods.....kilogrammes...	171,247	149,605	856,235	748,025
Sweets.....do.....	254,388	252,704	763,164	758,112
Soup paste, etc.....do.....	3,162,221	2,791,724	1,581,111	1,395,862
Cheese.....do.....	1,202,368	1,331,175	2,404,736	2,662,350
Total grain and food.....do.....			178,388,398	219,400,419
<i>Class 13.—Sundries.</i>				
Ornaments.....kilogrammes...	11,953	8,356	597,650	417,800
Amber, bones, etc.....do.....	104,650	139,211	1,569,750	2,088,165
Manufactured.....do.....	14,743	12,487	368,575	312,175
Buttons, all kinds.....do.....	310,483	271,058	1,552,415	1,355,220
Playing games and toys.....do.....	271,563	191,945	1,629,378	1,151,670

Table showing the quantity and value of imports into Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 13.—Sundries—Continued.</i>				
Passenteries :			<i>Pesetas.</i>	<i>Pesetas.</i>
Silk kilogrammes...	3,588	3,284	179,400	164,200
Wool.....do.....	43,340	29,669	433,400	296,690
Other classes.....do.....	70,837	65,995	566,696	527,960
Elastic goods.....do.....	131,188	97,587	1,886,689	1,400,749
Total.....			8,783,953	7,714,699

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Classes.	1889.	1890.
	<i>Pesetas.</i>	<i>Pesetas.</i>
Class 1 (minerals, glassware, stone, etc.).....	65,312,055	74,348,749
Class 2 (metals and manufactures).....	34,126,772	42,406,436
Class 3 (drugs, medicines, etc.).....	48,702,424	49,518,480
Class 4 (cotton and manufactures).....	105,742,438	86,323,296
Class 5 (vegetable fibers and manufactures).....	32,405,210	32,977,289
Class 6 (wool and manufactures).....	43,445,236	37,499,273
Class 7 (silk and manufactures).....	22,745,709	17,898,521
Class 8 (paper and manufactures).....	9,085,107	7,765,437
Class 9 (wood and manufactures).....	55,946,703	55,665,452
Class 10 (animals and their products).....	48,247,790	49,218,599
Class 11 (machinery, vessels, etc.).....	45,626,328	59,103,997
Class 12 (cereals and breadstuffs).....	178,389,398	219,400,419
Class 13 (sundries).....	8,783,953	7,714,699
Total.....	698,599,121	732,835,242

Table showing the quantity and value of exports from Spain during the years 1889 and 1890, according to tariff classification.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 1.—Minerals, ceramic, etc.</i>				
Coal.....tons...	16,633	16,771	415,827	83,855
Tar, pitch, etc.....kilogrammes...	2,246,000	2,600,809	291,984	318,993
Galena :				
Not argentiferous.....do.....	628,381	882,101	163,379	229,346
Argentiferous.....do.....	9,808,222	9,848,975	5,296,440	5,318,648
Other minerals of lead.....do.....	2,209,824	2,223,965	508,260	511,512
Blende.....do.....	12,894,908	17,263,510	296,582	397,161
Calamine.....do.....	23,213,450	29,761,960	766,044	982,842
Phospholite.....do.....	8,520,064	20,000	85,201	200
Minerals :				
Antimony.....do.....	254,410	596,885	76,323	179,065
Copper.....do.....	762,249,834	680,277,599	28,965,494	25,855,547
Mata cobriza.....do.....	18,775,290	24,313,890	1,088,967	1,420,205
Iron ore.....do.....	5,051,613,352	5,648,810,770	55,567,748	62,136,918
Pyrites of iron.....do.....	121,928,106	163,825,483	1,219,281	1,698,250
Manganese.....do.....	8,187,481	5,570,240	409,374	278,512
Stones and mosaics.....do.....	950,597	745,336	285,180	223,602

Table showing the quantity and value of exports from Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 1.—Minerals, ceramic, etc.—Continued.</i>				
Tiles:			<i>Pesetas.</i>	<i>Pesetas.</i>
Painted with colors.....kilogrammes...	301,185	325,281	135,534	146,377
Common.....do.....	119,196	111,751	95,356	89,300
Fine and porcelain.....do.....	14,785	25,919	14,785	25,919
Total.....			95,681,759	99,826,252
<i>Class 2.—Metals and their manufactures.</i>				
Gold:				
Bars and coin.....			136,090	273,420
Jewels and table service.....			36,000	52,500
Silver:				
Bars and coin.....			13,106,048	4,663,474
Jewels and table service.....			134,736	27,888
Jewelers' waste.....kilogrammes...	22,980	6,593	344,700	98,895
Iron (Ingots).....do.....	65,470,690	67,446,379	5,237,656	5,395,710
Wrought iron and steel bars.....do.....	147,380	490,441	51,584	171,653
Railway rails (old).....do.....	14,213,960	8,160,187	994,977	571,213
Iron goods.....do.....	3,620,168	1,281,978	1,991,092	705,088
Copper:				
Sheet.....do.....	34,811,771	38,934,380	27,849,417	31,683,295
Black and old.....do.....	2,557,307	123,895	3,835,961	185,843
Bars.....do.....	2,671	5,779	5,475	11,846
Sheets and nails.....do.....	44,063	52,204	116,767	138,130
Brass sheets.....do.....	16,715	42,445	38,444	97,624
Copper, brass, and bronze manufactures.....do.....	200,217	67,542	1,002,085	337,630
Quicksilver or mercury.....do.....	1,974,512	989,107	11,057,268	5,538,999
Pig lead:				
Argentiferous.....do.....	71,942,987	81,230,604	26,618,906	30,055,323
Poor in silver.....do.....	65,012,812	59,094,405	21,454,228	19,501,154
Lead:				
In tubes.....do.....	19,776	13,500	8,899	5,974
Other objects.....do.....	724,919	322,544	275,469	122,567
Zinc bars and sheets.....do.....	2,494,420	2,010,324	1,371,931	1,105,678
All other metals and their alloys.....do.....	78,722	301,319	236,166	903,957
Total.....			115,902,899	101,687,861
<i>Class 3.—Drugs and chemical products.</i>				
Oil:				
Almond.....kilogrammes...	1,857	1,762	5,757	5,462
Peanut and other seed.....do.....	183,458	165,424	155,639	140,610
Olive lees.....do.....	594	6,362	226	2,418
Barks for tanning.....do.....	2,084,267	2,703,961	416,853	540,792
Peanuts.....do.....	738,436	566,200	287,992	220,816
Licorice:				
Root.....do.....	2,743,606	2,765,731	823,082	829,718
Paste and extract.....do.....	466,288	688,782	652,803	964,295
Vegetable products (unclassified).....do.....	1,179,343	515,975	1,297,276	567,573
Sulphur.....do.....	56,343	143,968	7,326	18,716
Tartar and lees of wine.....do.....	323,601,624	258,040,064	4,854,026	3,870,600
Cream of tartar.....do.....	365,888	617,738	951,308	1,606,119
Soap, common.....do.....	6,964,745	7,895,314	3,938,846	4,737,118
Candles.....do.....	1,074,336	1,240,100	1,777,654	2,046,165
Perfumery and essences.....do.....	54,844	51,213	438,752	406,714
Lees of wine.....do.....	4,603,432	5,066,086	9,667,206	10,638,781
Total.....			25,270,046	26,595,967

Table showing the quantity and value of exports from Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 4.—Cotton manufactures.</i>				
Cotton textures :			<i>Pescetas.</i>	<i>Pescetas.</i>
White.....kilogrammes...	2,719,201	2,587,232	13,596,005	13,036,160
Dyed and stamped.....do.....	923,683	1,151,547	6,465,781	8,060,829
Knit goods.....do.....	565,515	759,481	3,393,096	4,556,886
Total.....			23,454,882	25,053,875
<i>Class 5.—Vegetable fibers and their manufactures.</i>				
Hemp and flax yarns.....kilogrammes...	23,696	27,214	58,056	66,673
Rigging and cordage.....do.....	626,203	570,966	720,133	656,611
Thread textures.....do.....	143,095	119,086	858,570	714,516
Printed textures.....do.....	2,003	2,736	20,030	27,360
Other vegetable fiber textures.....do.....	29,832	18,344	44,749	27,517
Lace.....do.....	5,384	3,888	1,184,480	855,360
Total.....			2,886,018	2,348,037
<i>Class 6.—Wool and its manufactures.</i>				
Wool :				
Unwashed.....kilogrammes...	8,509,328	5,057,171	15,316,790	9,102,908
Washed.....do.....	36,752	48,222	152,521	200,122
Blankets.....do.....	7,667	13,413	61,336	108,304
Knit textures.....do.....	3,965	4,080	63,440	65,280
Woolen cloth :				
Pure.....do.....	89,155	88,187	1,872,255	1,851,927
Mixed with cotton.....do.....	6,588	8,116	85,644	105,443
Other textures of wool :				
Pure.....do.....	132,691	84,896	1,924,021	1,230,992
Mixed with cotton.....do.....	16,302	38,481	163,020	384,810
Total.....			19,639,027	13,049,786
<i>Class 7.—Silk and its manufactures.</i>				
Silk :				
In cocoons.....kilogrammes...	23,655	58,299	307,515	757,887
Waste.....do.....	55,802	58,486	613,822	643,346
Raw.....do.....	49,870	34,997	2,393,760	1,679,856
Sewing.....do.....	359	466	20,463	26,562
Textures :				
Plain.....do.....	9,973	8,015	947,435	761,425
Figured.....do.....	1,059	886	153,555	128,479
Velvet.....do.....	9	187	1,305	27,115
Lace.....do.....	64	16	64,000	16,000
Total.....			4,501,855	4,040,661
<i>Class 8.—Paper and its manufactures.</i>				
Printing paper.....kilogrammes...	123,445	763,871	104,927	609,290
Handmade.....do.....	873,305	952,283	1,484,619	1,618,881
Letter paper and envelopes.....do.....	88,585	37,032	132,878	55,548
Cigarette.....do.....	1,198,646	1,280,373	3,595,938	3,841,119
Books and music paper.....do.....	730,572	762,575	2,191,716	2,287,725
Engraving.....do.....	68,765	62,632	1,719,125	1,565,800
Packing paper.....do.....	1,046,678	1,046,994	732,675	732,895
Total.....			9,961,918	10,751,258
<i>Class 9.—Lumber and other articles.</i>				
Lumber.....kilogrammes...	24,512,360	33,469,616	1,960,989	2,667,569
Cork :				
Sheets.....do.....	3,015,003	2,369,826	1,447,201	1,137,516
In small pieces.....do.....	10,182	11,701	101,820	117,012

Table showing the quantity and value of exports from Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 9.—Lumber and other articles—Continued.</i>				
Cork—Continued.			<i>Pesetas.</i>	<i>Pesetas.</i>
For bottles.....kilogrammes...	1,416,459	1,579,203	19,830,426	22,108,842
In other forms.....do.....	1,508,460	2,914,820	226,269	437,223
Spanish grass.....do.....	43,792,527	49,338,956	7,882,655	8,881,012
Manufactured.....do.....	1,487,580	538,122	416,122	150,674
Rags for paper manufacturing.....do.....	116,635	21,632	40,822	7,571
Total.....			31,906,704	35,517,417
<i>Class 10.—Animals and animal products.</i>				
Horses.....do.....number...	2,615	3,100	1,176,750	1,395,000
Mules.....do.....	1,836	1,477	826,200	664,650
Asses.....do.....	1,191	506	83,370	35,420
Cattle.....do.....	52,124	46,078	18,243,400	16,127,300
Sheep.....do.....	33,663	12,836	403,936	154,032
Goats.....do.....	1,684	2,297	20,208	27,564
Swine.....do.....	2,838	7,666	283,800	776,600
Skins:				
Sheep.....kilogrammes...	1,351,824	1,520,274	2,433,284	2,736,493
Goat.....do.....	614,178	700,547	2,303,167	2,627,051
Other.....do.....	550,496	628,816	880,793	1,006,105
Sole.....do.....	47,168	56,881	424,512	507,429
Tanned hides:				
Sole leather.....do.....	12,509	13,317	87,563	93,219
Calf hides (dressed).....do.....	83,423	63,880	367,653	302,680
Sheepskins (dressed).....do.....	270,798	328,390	1,624,788	1,970,340
Boots and shoes.....do.....	994,835	1,066,155	15,917,360	17,058,480
Total.....			45,076,804	45,872,363
<i>Class 11.—Machinery.</i>				
Machinery.....kilogrammes...	841,216	842,077	1,068,344	1,069,437
<i>Class 12.—Grain and food.</i>				
Fowl and game.....kilogrammes...	87,550	129,993	175,100	258,186
Fresh meat.....do.....	5,046	2,524	5,046	2,524
Hams and salt meat.....do.....	131,050	154,661	209,680	247,458
Bacon and lard.....do.....	76,764	60,385	134,336	105,674
Butter.....do.....	319,955	289,835	895,874	811,538
Fish:				
Fresh.....do.....	702,133	1,662,820	175,534	415,705
Lobster and all shellfish.....do.....	209,948	259,325	314,923	388,988
Sardines.....do.....	4,555,782	6,000,196	2,186,751	2,880,075
All other (smoked).....do.....	917,456	1,439,729	871,583	1,367,743
Rice.....do.....	1,519,374	5,576,439	683,718	2,509,398
Barley.....do.....	554,870	154,083	77,681	21,572
Rye.....do.....	917,480	647,885	146,797	103,662
Indian corn.....do.....	9,535	12,900	1,812	2,451
Wheat.....do.....	162,354	699,219	29,223	125,859
Other cereals.....do.....	3,690,111	1,225,282	474,514	159,287
Wheat flour.....do.....	23,806,168	31,643,416	7,486,773	10,125,893
Chick-peas.....do.....	3,569,507	4,083,735	1,963,229	2,246,054
Other dried vegetables.....do.....	2,654,360	3,700,491	822,851	1,147,152
Garlic.....do.....	3,044,953	4,306,319	2,192,366	3,100,550
Onions.....do.....	14,924,031	17,283,258	2,238,604	2,592,489
Beans (green).....do.....	18,402	49,076	5,521	14,723
Potatoes.....do.....	2,940,034	3,502,821	264,602	315,254
Other vegetables.....do.....	3,196,382	3,581,612	479,457	537,242
Olives.....do.....	3,538,653	4,903,961	2,477,058	3,432,773

Table showing the quantity and value of exports from Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 12.—Grain and food—Continued.</i>				
Almonds:			<i>Pescetas.</i>	<i>Pescetas.</i>
In shell.....kilogrammes...	1,827,082	2,604,810	1,735,728	2,474,569
Shelled.....do.....	3,400,000	1,375,154	6,800,000	2,750,308
Filberts.....do.....	5,251,114	5,775,457	2,783,001	3,060,992
Chestnuts.....do.....	1,293,346	1,185,468	262,556	262,802
Figs (dried).....do.....	3,036,230	4,429,374	890,144	1,240,225
Walnuts.....do.....	67,948	193,792	23,102	65,889
Raisins.....do.....	28,899,180	50,815,492	17,339,513	30,429,295
Other dried fruits.....do.....	160,474	417,638	64,190	167,055
Pomegranates.....do.....	1,566,521	1,762,732	313,303	355,546
Lemons.....do.....	5,193,522	3,509,486	934,884	991,707
Oranges.....do.....	97,771,889	101,472,006	19,554,378	20,294,401
Grapes.....do.....	16,942,041	25,324,652	7,623,918	11,406,093
Other fresh fruits.....do.....	7,222,783	7,060,123	1,747,868	1,694,429
Aniseed.....do.....	874,367	872,901	872,367	874,901
Saffron.....do.....	29,632	43,426	2,963,200	4,342,600
Cumin.....do.....	151,761	81,558	182,113	97,870
Capsicums.....do.....	1,308,365	1,399,239	1,357,529	1,259,315
Olive oil.....do.....	30,484,720	14,563,046	26,826,554	12,815,481
Carob.....do.....	1,352,250	127,256	162,271	15,272
Canary seed.....do.....	796,207	660,218	214,976	176,250
Preserved foods.....do.....	5,513,226	6,177,171	8,269,841	9,265,757
Sausage.....do.....	229,215	340,100	1,446,075	1,700,500
Chocolate.....do.....	278,646	315,337	835,938	945,993
Sweets.....do.....	240,877	260,157	602,192	690,393
Spirits (common).....hectolitres...	492	6,173	294,156	370,320
Liquors of aniseed.....do.....	6,666	10,699	433,328	695,435
Spirits of wine.....do.....	1,078	360	80,851	27,000
Common wine:				
To France.....do.....	7,086,202	8,002,502	212,586,060	240,075,060
To England.....do.....	77,779	105,605	2,333,370	3,168,150
To the rest of Europe and Africa.....do.....	112,247	127,464	3,367,410	3,223,520
To foreign America.....do.....	645,993	470,858	19,379,790	14,125,740
To Asia and Oceanica.....do.....	33,301	24,173	999,030	725,190
To Cuba and Porto Rico.....do.....	450,308	466,105	13,509,240	13,983,150
Total.....do.....	8,405,830	9,196,707	252,174,900	275,901,210
Sherry:				
To France.....do.....	54,994	55,352	7,149,220	7,295,760
To England.....do.....	84,213	114,559	10,947,690	14,892,670
To the rest of Europe and Africa.....do.....	19,520	20,818	2,537,600	2,706,340
To Cuba and Porto Rico.....do.....	2,718	2,250	353,340	292,500
To foreign America.....do.....	21,011	26,682	2,731,430	3,468,670
To Asia and Oceanica.....do.....	905	792	117,650	102,962
Total.....do.....	183,361	220,453	23,836,930	28,695,890
Other wines:				
To France.....do.....	34,211	38,621	3,078,990	3,475,890
To England.....do.....	4,509	6,830	405,810	614,700
To the rest of Europe and Africa.....do.....	16,816	8,169	1,513,440	735,210
To Cuba and Porto Rico.....do.....	2,573	948	141,570	85,320
To foreign America.....do.....	13,933	5,225	1,253,970	470,250
To Asia and Oceanica.....do.....	395	125	35,550	11,250
Total.....do.....	71,437	59,918	6,429,330	5,392,620
Total grain and food.....do.....			412,000,609	452,365,451

Table showing the quantity and value of exports from Spain, etc.—Continued.

Articles.	Quantity.		Value.	
	1889.	1890.	1889.	1890.
<i>Class 13.—Sundries.</i>			<i>Pescetas.</i>	<i>Pescetas.</i>
Fans.....kilogrammes.....	48,229	44,724	1,805,725	1,118,100
Acargate or hemp shoes.....do.....	45,063	53,508	540,756	642,096
Wax light.....do.....	25,953	34,205	51,906	68,410
Playing cards.....do.....	196,170	197,205	1,177,020	1,183,230
Total.....			2,975,407	3,011,836

RÉSUMÉ.

Classes.	1889.	1890.
	<i>Pescetas.</i>	<i>Pescetas.</i>
Class 1 (minerals, glassware, stone, etc.).....	95,681,759	99,826,232
Class 2 (metals and manufactures).....	115,902,899	101,687,861
Class 3 (drugs, medicines, etc.).....	25,270,046	26,595,967
Class 4 (cotton and manufactures).....	23,454,822	25,653,875
Class 5 (vegetable fibers and manufactures).....	2,886,018	2,348,037
Class 6 (wool and manufactures).....	19,639,027	13,049,786
Class 7 (silk and manufactures).....	4,501,855	4,040,661
Class 8 (paper and manufactures).....	9,961,918	10,751,258
Class 9 (wood and manufactures).....	31,906,704	35,517,417
Class 10 (animals and their products).....	45,076,804	45,872,363
Class 11 (machinery, vessels, etc.).....	1,068,431	1,069,437
Class 12 (cereals and breadstuffs).....	412,000,609	452,365,451
Class 13 (sundries).....	2,975,407	3,011,836
Total.....	790,326,272	821,790,201

ROBERT W. TURNER,

Consul.

UNITED STATES CONSULATE,

Cádiz, February 7, 1891.

IMPORT TARIFF AT COLON.

REPORT BY CONSUL SIMS.

On the 10th of January the following import duties went into effect at this port, and I invite your attention to the fact that all of these duties affect American producers or manufacturers. The following is the schedule:

Liquors of all kinds, 5 cents per pound; salt, $1\frac{1}{2}$ cents per pound; tobacco of all kinds, whether for chewing or smoking, 10 cents per pound. All of these import duties are on gross weight, which makes the tariff very high. I desire to call your attention, also, to the fact that about a year ago the Government here began, and still continues, to levy an import duty on salted beef, pork, and pigs' tongues of 5 cents per pound gross weight. These meats are only imported from the United States.

These, so far as I know, are the only import duties levied here, and all of these affect seriously American manufacturers and producers, while I do not now recall a single agricultural, mining, or manufacturing product from this district on which the United States Government lays any tariff. I believe that since I took charge of this consulate there has never been any invoice of goods certified by me on which any import duty was required by the United States Government. Cocoanuts, bananas, India rubber, ivory nuts, and South American wood and shell all go to the United States from here free, and they are the only products of this country. A relief from the enormous tax of 5 cents per pound on our salt meats would insure a wonderful increase of trade to American interest.

W. E. SIMS,
Consul.

UNITED STATES CONSULATE,
Colon, January 16, 1891.

COLOMBIAN CUSTOMS DUTIES.

REPORT BY CONSUL SIMS, OF COLON.

I deem it my duty to call your attention specially to my report of January 16, 1891, and to add thereto, for the information of American shippers, especially those in New York and New Orleans, that the Government here is very stringent and exacting in enforcing their new revenue laws, and threaten to fine \$800 and imprison if the invoices do not contain the exact gross weight of articles such as are mentioned in said report.

For instance, an American firm here received a lot of whisky from New York. It was bottled and packed in cases, and the gross weight was certified by the consignor in New York and the Colombian consul there; but it weighed about 40 or 50 pounds more than the certificate called for, and it was with difficulty that the fine and imprisonment were not enforced, and notice has been given that any future violation of the law will be punished.

W. E. SIMS,
Consul.

UNITED STATES CONSULATE,
Colon, February 14, 1891.

CARPET MANUFACTURE IN BIRMINGHAM.

REPORT BY CONSUL JARRETT.

The Department carpet circular of June 10, 1889, was received at this consulate on October 29 last, at which time I was away on leave of absence. As soon as possible after my return to my post I took up the matter, but found it very difficult to get reliable information, owing to the attitude of the

manufacturers of this district, who, perhaps not unnaturally, decline to give any particulars on what they consider private affairs pertaining to their business. This accounts for the delay on my part in replying to your circular. I now beg leave to submit the following report:

MILLS AND ESTABLISHMENTS.

List of mills or distinct establishments engaged in the manufacture of carpets in the district, with number of looms employed.

Names of firms.	Address.	No. of looms.
John Beattie & Co.....	Jubilee Carpet Works, Kidderminster.....	*128
John Brinton & Co. (limited).....	Exchange street, Kidderminster.....	50
Childema Carpet Co. (limited).....	Green street, Kidderminster.....	30
Frederick Cole.....	Worcester Road Carpet Works, Kidderminster.....	6
H. J. Dixon & Co. (limited).....	Long Meadow Mills, Kidderminster.....	61
W. Green & Sons.....	New Road Mills, Kidderminster.....	76
Naylor & Lloyd.....	Mill street, Kidderminster.....	44
T. & A. Naylor.....	Green street, Kidderminster.....	†36
Morton & Sons.....	New Road, Kidderminster.....	87
E. Hughes & Sons.....	Mill street, Kidderminster.....	80
J. Hampshires & Sons.....	do.....	137
G. W. Oldland & Co.....	do.....	24
Do.....	Green street, Kidderminster.....	29
R. Smith & Co.....	Mill street, Kidderminster.....	†328
Tomkinson & Adam.....	Church street, Kidderminster.....	‡400
M. Whittall & Co.....	Stour Vale Mills, Kidderminster.....	51
Woodward, Grosvenor & Co.....	Worcester Cross, Kidderminster.....	64
H. R. Willis & Co.....	Worcester Cross Factory, Kidderminster.....	42
W. J. Bannister.....	New Road, Kidderminster.....	9
Potter & Lewis.....	do.....	30
Whittall Bros.....	Vicar street, Kidderminster.....	20
H. & M. Southwell (limited).....	The Friars, Bridgnorth.....	†72
R. Smith & Co.....	Stourport.....	22
C. Harrison & Son.....	do.....	47
T. B. Worth & Son.....	Seven Valley Mills, Stourport.....	70
Barton & Sons.....	Vicar street, Kidderminster.....	50
Total.....		1,993

NOTE.—All looms are driven by power, except the rug looms, which are hand. In addition to the above every manufacturer has a few rug looms upon his premises.

*98 Brussels and 30 tapestry. †15 wide and 21 narrow, Kidderminster.

‡28 Brussels and 300 hand rug. ‡150 Axminster and 250 rug.

‡50 Brussels and 22 Axminster and velvet.

NUMBER OF LOOMS.

The number of looms in each establishment is given in the foregoing table. The total number of looms is 1,993, of which 1,443 are power and 550 hand looms, employing 1,993 men and 994 boys, one boy attending to two weavers.

GRADES OF CARPET PRODUCED.

I have been unable to ascertain the portion produced of pure carpets to those of lower grades. The principal manufactures are those of Brussels, velvet, and Axminster. The tapestry trade is nearly nil in this district. owing,

the manufacturers claim, to the operatives demanding wages which rendered the trade unremunerative, the operatives in the north of England and Scotland working at a considerably lower figure. The quantities of the lower grades manufactured would be near one-fifth of the whole.

WAGES, ETC.

It is estimated that the number of persons who find wage employment in the manufacture of carpets in the district is between 5,000 and 6,000. None are employed in their homes. The hours of labor are from 54 to 60 hours each week. The order for each day is as follows: From 6 until 8:30 a. m., when half an hour is allowed for breakfast; from 9 a. m. to 1 p. m., when an hour for dinner is allowed; from 2 to 5 p. m., when work ceases. Weavers are paid for weaving Brussels three-fourths, five-eighths, and one-half of a yard wide 5 cents per yard; creelers, or assistants, 4 cents in every 24 cents earned by the two weavers on whom they attend, or about \$2.19 per week. In some establishments weavers are paid by the week, when their wages are \$6.81 per week.

Table showing the wages of other factory employes.

Description.	Wages.
Spool-winders (females).....	49 cents per 100 spools.
Linen-winders (females).....	26 cents per 100 spools.
Shearers.....	\$4.14 to \$6.08 per week.
Twisters.....	40 cents for 256 bobbins (1 frame).
Stampers.....	15 cents per 100 cards.
Starchers.....	53 cents per small chain of 260 yards.
Do.....	85 cents each for double stuffers.

The wages paid in the spinning mills are \$1.82 per week to girls who are employed as spinners and \$3.65 to \$4.14 per week to women who are employed as drawers and keelers. The overlookers and assistants of various sorts are men, whose wages run from \$3.89 to \$7.30 per week. Foremen are paid from \$7.30 to \$9.73 per week; head engineers, from \$9.73 to \$19.46 per week; engineers, from \$6.08 to \$8.51 per week; assistants, \$4.38 per week. Chenile rug looms are worked by women, whose wages are about \$4.14 per week.

The manner of living of the work people engaged in the carpet industries is very much the same as that of artisans generally employed in manufactures in this country. They live in small brick or stone houses of two, three, or four rooms, which rent at from 97 cents to \$1.46 per week. Among the more thrifty and economical the houses are clean and comfortable, but plainly furnished. But the homes of the masses of the work people are dirty, very poorly furnished, and in quite a number of cases I found no furniture except a few dilapidated chairs, with a more dilapidated plain deal table for a companion. Carpets or rugs are quite out of the question, only a few homes of the higher-waged artisans possessing any. The food is of the commonest

and cheapest kind, consisting, generally, of plain bread and butter or cheese, with tea or sometimes coffee, occasionally eggs or meat and vegetables, and sometimes a little fruit. Generally the clothing is very coarse, of inferior quality, and bad fitting. Beer-drinking is a very common habit. In a word, their manner of living may be termed a hand-to-mouth existence.

HOW THE INDUSTRY IS CONDUCTED.

The industry is conducted unitedly, except that the spinning is entirely an independent department. Only two firms supplying carpet yarns carry on the business of manufacturing yarns in Kidderminster.

HOW THE PRODUCT IS MARKETING.

The product is placed upon the market by means of an efficient staff of travelers, wholesale houses, and commission merchants. The travelers take orders from the retail houses.

WHERE THE PRODUCTS FIND CONSUMPTION.

The product finds consumption both at home and abroad. It is exported to every country in Europe, to the United States, South America, Australia, and South Africa. The ordinary terms of sale in England are payment by 4 months' bills from date of delivery, except in special cases. A practice has also grown up here of buyers insisting that the delivery of goods should be dated forward 2, and sometimes 3, months. With regard to the trade with the United States, credits are opened with shippers' agents in England, and the manufacturers draw on them on delivery of the goods at the shipping port. In the Australian trade, in a number of instances, the bills of lading are sent out to a bank in that country and are handed over to the purchaser upon his paying the amount to the bank; but the bulk of the business is done by 6 months' bills drawn on, and accepted by, the agents of the purchaser in London or trade discount allowed for cash payment. In the Canadian trade similar terms prevail, but the bulk of the business is done by sending the bills over for acceptance, and they are returned made payable at a London bank. In the German trade 4 months' bills are taken, which are accepted by the purchasers and returned to the seller. In the French and Belgian trade bills at 4 months are drawn on the purchaser and accepted payable in London or at the office of the seller. In the Swedish trade bills are also drawn on the purchaser and paid through a London bank. In the Russian trade similar terms prevail. Of late there has been a disposition for two or more firms to amalgamate by forming a company with a limited liability, and several such transactions have recently taken place.

JOHN JARRETT,

Consul.

UNITED STATES CONSULATE,

Birmingham, January 23, 1891.

EXPORTS FROM AUSTRIA TO THE UNITED STATES.

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

*Value of declared exports from Austria-Hungary to the United States during the year ended
December 31, 1890.*

Articles.	Buda-Pesth.	Prague.	Reichenberg.
Albumen.....		\$1,855.68	
Antiquities.....	\$480.31		
Argols.....	11,177.65		
Artificial flowers.....		5,900.46	
Art, works of.....	332.78	869.40	
Baskets and basket ware.....	2,417.18	5,765.42	
Beans and lentils.....	126,515.16	56,966.00	
Bed feathers.....	253.06	116,415.41	
Beer.....		60,449.43	
Beet-root sugar.....		3,584,508.84	
Black lead.....		18,902.14	
Books and papers.....	3,476.29	5,408.63	
Brushes and bristles.....	22,695.76		
Buttons.....		207,129.30	\$125,588.58
Carlsbad Sprudel salt.....		14,452.17	
Carriages.....	179.13		
Chemilles and embroideries.....		2,237.84	
Cloth and woolen goods.....		103,090.69	14,240.82
Cutlery.....		15,040.11	282.25
Drugs and chemicals.....		26,307.69	
Fancy goods and jewelry.....		36,588.55	294,732.94
Fruits, dried.....	124,023.00	14,413.93	
Furniture.....	507.53	11,156.64	3,903.98
Glassware.....	13,324.41	375,744.29	466,126.15
Gloves.....		166,299.28	
Gum.....	811.03		
Hair:			
Animal.....		3,276.65	
Human.....		33,373.95	
Herbs, roots, and leaves.....	7,861.18	391.51	
Hops.....		55,445.90	
Leather and skins.....	4,487.06	16,403.94	
Linen and cotton goods.....		180,525.00	110,609.13
Machines and parts of.....	548.55		
Metal ware.....	2,101.96	9,200.77	8,432.26
Mineral water.....	92,528.45	19,896.80	
Mirror glass.....		38,982.90	
Musical instruments.....		24,060.33	1,815.12
Oils and paints.....	799.20		952.85
Paper goods.....		51,108.98	11.72
Porcelain and pottery.....	19,175.09	637,561.90	51,669.50
Potash.....		30,288.76	
Pulp.....	1,019.99	99,992.44	
Seeds.....	1,058.46		
Silks and velvets.....		136,397.21	
Skeletons.....		1,279.72	
Smokers' articles.....	69.00	4,107.20	
Stationery.....		1,289.14	192.67
Tartar, crude.....	15,110.55		
Toys.....		16,324.31	1,528.43
Umbrella fixtures.....	1,505.40		
Wines and liquors.....	77,173.14	461.58	

EXPORTS FROM AUSTRIA TO THE UNITED STATES. 459

Value of declared exports from Austria-Hungary to the United States, etc.—Continued.

Articles.	Buda-Pesth.	Prague.	Reichenberg.
Wooden goods.....		\$1,997.50	\$4,928.72
Wool.....		53,533.72	
Miscellaneous.....	\$3,463.68	6,051.48	1,002.82
Total.....	533,095.00	6,251,435.59	1,086,017.94
Total for 1889.....	338,446.41	2,826,269.99	622,847.02
Increase.....	194,648.59	3,425,165.60	463,170.92

Articles.	Trieste.	Vienna.	Total.
Albumen.....		\$9,395.87	\$11,251.55
Amber.....		3,223.08	3,223.08
Antiquities.....		1,244.74	1,725.05
Argols.....	\$6,195.37	130,207.01	147,580.03
Artificial flowers.....		2,050.05	7,950.51
Art, works of.....		23,517.56	24,719.74
Baskets and basket ware.....		12,985.28	21,167.88
Beans and lentils.....	107,496.41	70,277.39	361,254.96
Bed feathers.....			116,668.47
Beer.....		2,125.34	62,574.77
Beet-root sugar.....		1,303.68	3,585,812.52
Black lead.....			18,902.14
Books and papers.....	2,930.74	3,510.51	15,326.17
Brushes and bristles.....		13,816.83	36,512.59
Buttons.....		1,786,651.24	2,119,369.12
Carlsbad Sprudel salt.....			14,452.17
Carriages.....	224.27	765.58	1,168.98
Chenilles and embroideries.....		14,727.62	16,965.46
Cloth and woollen goods.....		158,697.24	276,028.75
Cutlery.....		100.83	15,423.19
Cuttle-bones.....	18,701.26		18,701.26
Dresses.....		5,619.21	5,619.21
Drugs and chemicals.....	19,575.56	42,747.03	88,630.28
Fancy goods and jewelry.....		127,963.68	459,285.17
Fans.....		227,319.56	227,319.56
Fruits, dried.....	1,220,262.17	884.75	1,359,583.85
Furniture.....		111,899.07	127,467.22
Glassware.....		98,854.32	954,049.17
Gloves.....		58,006.42	224,305.70
Gum.....	105,942.63	22,214.48	128,968.14
Hair:			
Animal.....		3,899.18	7,175.83
Human.....		1,967.88	35,341.83
Hemp.....	8,091.36		8,091.36
Herbs, roots, and leaves.....	39,287.34	71.50	47,611.53
Hollow ware.....		16,753.92	16,753.92
Hops.....		2,424.37	57,870.27
Insect powder and flowers.....	125,830.62	4,789.49	130,620.11
Leather and skins.....	51,170.78	96,983.66	169,047.44
Linen and cotton goods.....		675,390.94	966,525.07
Macaroni.....	4,861.07		4,861.07
Machines and parts of.....		6,303.84	6,852.39
Matches.....		1,994.56	1,994.56
Meerscham, crude.....		64,342.16	64,342.16
Metal ware.....	158.13	68,139.25	88,032.37
Mineral water.....	44.69		112,469.94
Mirror glass.....			38,982.90
Musical instruments.....		8,183.49	34,058.94
Oils and paints.....	21,438.36	742.62	23,933.03
Ozocerite and ceresin.....	349.54	53,109.85	53,459.39

Value of declared exports from Austria-Hungary to the United States, etc.—Continued.

Articles.	Trieste.	Vienna.	Total.
Paper goods.....		\$8,051.98	\$89,170.68
Porcelain and pottery.....		23,378.79	731,785.28
Potash.....			30,288.76
Pulp.....		105,791.29	206,803.77
Rags.....	\$1,800.10		1,800.10
Scientific instruments.....		2,928.86	2,928.86
Seeds.....	14,671.11		15,729.57
Silks and velvets.....		275,635.58	412,032.79
Skeletons.....		1,996.16	3,275.88
Smokers' articles.....	219.27	169,131.12	173,526.59
Sponges.....	12,648.26		12,648.26
Stained glass.....		19,412.34	19,412.34
Stationery.....		7,703.26	9,185.07
Stone and bricks.....		3,529.09	3,529.09
Tartar, crude.....	10,034.89		25,145.44
Toys.....		1,657.25	19,529.99
Umbrella fixtures.....		62,712.82	64,224.22
Wax figures.....		1,628.35	1,628.35
White lead.....	9,738.16		9,738.16
Wicks.....		1,907.08	1,907.08
Wines and liquors.....	4,359.95	32,802.86	114,797.53
Wooden goods.....	505.64	13,801.78	21,233.64
Wool.....	4,206.11	13,799.25	71,539.08
Miscellaneous.....	5,175.08	7,659.23	23,352.29
Total.....	1,795,918.87	4,688,738.17	14,355,225.57
Total for 1889.....	1,209,357.42	4,124,925.49	9,121,246.33
Increase.....	586,561.45	563,812.68	5,233,979.24

JULIUS GOLDSCHMIDT,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, January 1, 1891.

MANUFACTURE OF PIECE-DYED SATINS AT LYONS.

REPORT BY CONSULAR CLERK HANSMANN.

I have the honor to submit the following report on the cost of production of piece-dyed satins, having special reference to the prices at which said goods are now being invoiced in consignment and to the accuracy of the estimates of cost of production made by the silk experts attached to this consulate.

The information has been obtained by personal visits to the offices of all the manufacturers whose affairs are herein discussed, by examination of their books and factories, by inquiring of laborers, dyers, silk and yarn merchants, and from such other sources as seemed reliable, the statements of cost of production furnished by the manufacturers in compliance with the act of June 10, 1890, having been carefully compared with each other and tested as to their accuracy.

Piece-dyed satins constitute one of the leading articles of export from this consular district. As the goods are almost always consigned, and as the qualities made for New York are rarely sold for other markets, the question of valuations presents many difficulties.

The manufacture of these goods is limited to a small number of concerns, almost all of which carry on the work on a large scale. For my investigation I have confined myself to the following houses, whose shipments—all in consignment—cover perhaps 90 per cent. of all of these goods shipped to the United States: Bardon, Ritton & Mayen to W. H. Graef & Co., Bompia & Favre to J. J. Buchey & Co. and Passavant & Co., E. Chevallard to W. H. Graef & Co., Gindre & Co. to A. J. Badenhausen and E. M. Benjamin, A. Girard & Co. to Frederick Vietor & Achelis, J. & P. Michel & Co. to Iselin, Neeser & Co., and L. Permezel & Co. to Hoeninghaus & Curtiss.

Of these houses only the three last named possess factories of their own. A. Girard & Co. make the greater part of their piece-dyed goods in their own factories. J. & P. Michel & Co. succeed in making practically all their satins themselves. L. Permezel & Co. have recently purchased a factory with 450 looms, of which about 300 are engaged on piece-dyed satins. However, this house finds it necessary to employ from 1,000 to 1,200 looms outside of its own factory for the production of piece-dyed goods.

The other houses mentioned above own no factories, and this, it may be stated, is the general system prevailing at Lyons, experience having demonstrated it to be the most advantageous for those making only plain goods.

In the country surrounding Lyons there are numerous so-called "usiniers" (persons who own fully equipped factories and whose business it is to weave for the Lyons manufacturers). The manufacturer gives the usinier the raw material to be woven for a fixed sum per metre, the latter bearing all factory expenses. As there is much competition among these usiniers, their charges are always low, while in times of depression they accept work at a loss, merely to keep their factories running.

Manufacturers find it cheaper and safer to have plain goods woven by usiniers than to build or purchase factories of their own, for they thus never need run at a loss, they have a responsible party whom to hold for waste or damaged goods, they can give their entire attention to the sale and export of goods, to the favorable purchase of raw material, etc., without being engrossed in the time-absorbing question of the technic of weaving.

Only in the case of figured silks, where, if the design were given to an usinier, it would be stolen by competitors who have weaving done by the same party, is it found advantageous to weave the goods in one's own factory. In illustration of this I may say that each of the four firms mentioned as owning no factories has plenty of capital to buy or build a factory if such an investment were deemed profitable, and that, on the other hand, the three houses mentioned as owning factories operate them primarily with a view of protecting their novelties in figured goods.

ELEMENTS OF COST OF PRODUCTION.

Piece-dyed satins are composed of a chain (warp) of silk and a tram (weft or filler) of cotton. They are woven on power looms—the 46 and 48 centimetre widths in double piece—and, as their name implies, are dyed in the piece. The elements entering into the cost of production are: Raw material, viz, silk and cotton; labor, viz, winding and warping of the silk, weaving (including factory expenses), dying, finishing, and general expenses. These I will discuss in detail.

Silk.—The silk used is generally Italian or French “grege,” varying in price from 52 to 60 francs per kilogramme. Some qualities of piece-dyed satin are made with Canton grege, the price of which varies from 44 to 48 francs per kilogramme. Silk is usually sold at 90 days, with 2 per cent. off. Houses of good standing who purchase large quantities usually realize a saving of 1 to 2 francs per kilogramme on the official price list of the chamber of commerce, but on a rising market higher figures than the *cours officiel* are generally paid. Many manufacturers speculate in raw silk, but, while these operations are sometimes successful, speculation in raw silk causes most of the failures among manufacturers.

Cotton.—Nos. 30 to 45 are the grades of cotton yarn preferred for the tram. The price varies from 3.75 to 4.25 francs per kilogramme, with 10 to 20 per cent. discount.

Winding and warping of the grege.—The winding and warping of the grege is usually done by the usinier at a fixed rate per kilogramme, which is paid him in addition to what he receives for weaving. Sometimes the grege is given out specially to be wound and warped, but this is the more expensive way and costs from 4 to 5.50 francs per kilogramme. The price paid the usinier, if for winding alone, varies from 2.25 to 3 francs per kilogramme; if for winding and warping, from 3.50 to 4 francs per kilogramme.

Those who own their own factories can not do this work for less than 3.50 francs per kilogramme, as the following calculation (furnished by J. & P. Michel & Co. and others) will show:

Wages paid for winding are from 1.35 to 1.50 francs per day. The average amount wound on spools is 1,200 grammes per day per laborer, making 1.20 francs per kilogramme wages paid for this operation. In preparing the silk for winding and in transferring the silk from the spools to the bobbins half as many laborers are employed as in the winding itself. Adding one-half to 1.20 francs gives 1.80 francs as the amount of wages paid per kilogramme for winding.

Wages paid for warping are 2.25 to 3 francs per day. Four hundred metres of warp is an average day's work. This equals, depending on the weight of the warp, from 1.5 to 8 kilogrammes, averaging, however, very nearly 4 kilogrammes. The wages paid in warping, therefore, average 65 centimes per kilogramme, making a total of 2.45 francs per kilogramme expended in wages in the winding and warping.

Numerous manufacturers assure me that the factory expenses and waste incident to winding and warping are never less than 50 per cent. of the amount expended in wages paid the workmen, while they often reach 60 per cent. Adding 50 per cent. to 2.45 francs gives 3.67 francs per kilogramme as the cost of winding and warping.

It may therefore be stated that 3.50 francs per kilogramme fairly represents the cost of winding and warping, whether it be performed by the usinier or in the factory of the manufacturer.

Weaving.—The price paid the usinier for weaving depends on the width of the goods and the weight of the chain. Goods woven in double piece cost less than woven in single. As has been stated, all factory expenses are borne by the usinier. Of the amount he receives for the weaving he pays about 60 to 65 per cent. to the workman, the latter always working by the metre. The usinier's factory expenses are not less than 50 to 60 per cent. of the amount he expends in wages for weaving and include wages of harnessing the looms; cost of light, heat, and power; interest on capital, taxes, insurance, wear and tear of machinery, deterioration of premises, waste, etc.

While deferring the detailed discussion of the cost of weaving to the following division of this report, I desire to state here that there can be no doubt that those owning their own factories pay fully as much for the weaving as those working through the usinier. While the former, no doubt, save the usinier's profit, his expenses of inspection and superintendence fully equalize this gain.

Dyeing.—The rates of dyeing accorded the large houses are uniform. The tariff per kilogramme for satins dyed in the piece is at present as follows:

	Francs.
White or cream.....	1.50
Fourrures (92 centimetres), black or brown.....	2.50
Black or colors.....	2.75
Duchesse in black or colors.....	3.00

Twenty per cent. discount from above rates is allowed the large manufacturers. The dyers' syndicate has announced that after December 1 next the rates will be 1.75 francs for white or cream and 3.50 francs for black or colors, with only 5 per cent. discount.

Finishing.—The price of finishing, like that of dyeing, is quite uniform. It depends on the width of the goods and is generally, for 46 to 60 centimetre widths, 5 centimes per metre; for 92-centimetre widths, 8 centimes per metre. Some houses pay only 4½ centimes per metre for 46 to 48 centimetre widths and 5½ centimes per metre for 56 to 60 centimetre widths, the average remaining 5 centimes per metre for the narrow widths.

General expenses.—Factory expenses are covered by the "winding and warping" and by the "weaving," this term referring primarily to office expenses, such as the following: Rent of office, hire of clerks and employes, interest on capital, taxes, insurance, and incidental expenses. Messrs. J. & P. Michel & Co. and others state that 5 per cent. of the total output is a fair figure for office expenses.

Those owning factories should state the cost of weaving and of winding and warping, so as to cover all factory expenses, or, if they state the mere wages paid under these heads, a special item of 5 to 8 per cent. should be entered for factory expenses in addition to the 5 per cent. for office expenses. In either case the sum of the items should equal the amounts paid to the usinier by those owning no factories.

EXPERTS' ESTIMATES OF COST OF PRODUCTION.

The cost of production of piece-dyed goods is calculated by the silk experts attached to this consulate in the following manner:

Silk.—A sample of the entire width of the goods is cut so as to equal a precise fraction of a metre in length. It is then carefully weighed, and the weight of the goods per metre and per 100 metres is estimated. The sample is next placed under the microscope for the determination of the "armure," or composition of the goods. By this is meant the number of threads of tram the chain passes over for every one that it passes under. For piece-dyed satins this varies from six to fourteen, the number being found by actual count. Then a thread of the tram is followed and the number of chain or warp thread passing under it per centimetre is counted. This number multiplied by the number of the armure gives the number of warp threads per centimetre, and this number multiplied by the width of the goods in centimetres gives the total number of warp threads. Eighty warp threads constitute a "portée," a term used to indicate the unit of quantity when speaking of the warp.

The next step is to ascertain the fineness of the silk. A number of warp threads are carefully separated, and the number of fibers composing each is counted under the microscope. The average of this count gives the fineness of the silk. The number of portées in the chain and the number of fibers (*deniers*) composing the silk being known, the quantity or weight of warp in 100 metres of goods is determined by reference to a table which has the same authority in the silk world as a table of logarithms in mathematics. The weight of the silk warp in 100 metres being known, it is deducted from the total weight of the goods, and the remainder is the weight of the cotton tram, for in the process of dyeing and finishing these goods no sensible change of weight results. The weight of the raw material is thus ascertained with mathematical exactness.

The next step is to ascertain the quality and origin of the silk, in order to establish its value. As has been stated, the silks employed in piece-dyed satins are either French, Italian, or Canton. Between the grege of France and Italy there is practically no difference of price. Canton silk is easily distinguished from the others by reason of the irregular size of the fibers and the irregular number of fibers in the thread. The question of finding the quality of the silk presents no great difficulty to the expert, however confusing it may be to the uninitiated. The value of the silk is taken from the official price list of the chamber of commerce, standard discounts deducted.

Cotton.—The cotton thread in the tram is easily disposed of. The manner of ascertaining its weight has already been explained. For singles there is practically no difference in price; doubles and bleached yarns are slightly higher. The experts take the ruling market price for the cotton, deducting trade discounts.

The quantity and value of the raw material being known, the cost of transforming it into the finished fabric is readily estimated by reference to fixed schedules of figures.

Winding and warping of the silk.—Formerly the experts put 5 francs per kilogramme for winding and warping into their calculations, but about 2 months ago reduced the figure to 4 francs per kilogramme. Now, having found 3.50 francs to be about the correct figure for the large establishments, the experts take this sum for their calculations. When the silk is given out specially to be wound and warped, from 4 to 5.50 francs per kilogramme are paid; but where the work is done by the usinier (who also does the weaving), or when done by manufacturers in their own factories, the expense, as has been shown, is about 3.50 francs per kilogramme.

Weaving.—For weaving a tariff has been prepared, and is changed from time to time to adapt itself to the state of the market. It is based upon actual experience in the business on information obtained from the usiniers, laborers, and manufacturers, and represents the sum paid the usinier for the weaving, inclusive of all incidental factory expenses save the winding and warping of the grege. The usinier pays the workman about 60 per cent. of the sum he receives, the rest being for factory expenses. As has been stated, the expense of weaving is quite the same to those owning factories and those working through the usinier, and the tariff is equally applicable to both classes. The tariff at present in use, based on the quantity of warp (in portées), the width of the goods, and whether woven in single or double piece is as follows per metre:

Quantity.	46 to 60 centimetres (woven double).	60 centimetres (woven single).	92 centimetres.
	Francs.	Francs.	Francs.
Up to 50 portées.....	0.10	0.15	.....
50 to 80 portées.....	.15	.20	.....
80 to 110 portées.....	.20	.25	.....
110 to 140 portées.....	.25	.30	.....
140 to 170 portées.....	.....	.35	.....
170 to 200 portées.....	.....	.40	.....
Up to 90 portées.....	.....	.....	0.25
90 to 120 portées.....	.....	.....	.30
120 to 150 portées.....	.....	.....	.35
150 to 180 portées.....	.....	.....	.40

The substantial correctness of this tariff will appear from the following table, in which the experts' schedule prices are compared with the manufacturer's (Chevallard's) own statement of the cost of weaving:

Quality.	Width.	Invoice price, per metre.	Price of weaving, per metre.	
			Manufacturer's.	Experts'.
	<i>Centim's.</i>	<i>Francs.</i>	<i>Francs.</i>	<i>Francs.</i>
No. 87.....	48	1.30	0.14	0.15
No. 74.....	48	1.70	.17	.10
No. 119.....	60	1.22	.14	.15
No. 107.....	60	1.52	.19	.20
No. 109.....	60	1.60	.11	.20
No. 212.....	60	2.10	.24	.25
No. 122.....	60	2.90	.28	.30

Dyeing.—The cost of dyeing, as set forth in a preceding portion of this report, is taken as the standard by the experts. Until 3 weeks ago the discount of 20 per cent. allowed on dyeing was not taken into consideration, but at present net figures are used.

Finishing.—The cost of finishing is taken at 5 centimes per metre for the narrow widths (45 to 60 centimetres) and at 8 centimes per metre for the 92-centimetre widths.

The correctness of these figures may be judged from the following tabulation of the cost of finishing, as stated by the various manufacturers:

Name of firm.	46 to 48 centimetres.	56 to 60 centimetres.	92 centimetres.
	<i>Centimes.</i>	<i>Centimes.</i>	<i>Centimes.</i>
Bardon, Ritton & Mayen.....	5	5	8
Bompiat & Favre.....	4	5	8
E. Chevallard.....	4.5	5.5	8
Gindre & Co.....	5	5	8
A. Giraud & Co.....		5.1	8.5
J. & P. Michel & Co.....	5	5	8
L. Permezel & Co.....	3.5	3.5 to 4	7

General expenses.—A uniform sum of 5 per cent. of the net amount of raw material and labor is entered for general expenses. As has been stated, this does not refer to factory expenses, they being included with the weaving and the winding and warping. The various elements of the cost of production are then added together, the sum being the net cost of production. As these goods are always invoiced with 16 and 2 per cent. discount, this discount is added so as to give the cost of production, discounts included.

It being usually impracticable to examine all the different qualities embraced in the same shipment, several qualities representing the largest value are selected, and the cost of production of the entire shipment is estimated on the average result of the qualities analyzed in detail. As has already been

stated, during the course of the present investigation it has been found expedient to lower several standards employed by the experts, resulting in a lowering of their estimates by from 2 to 3 per cent.

In conclusion, I would say that, while slight errors are always possible, I am satisfied that the estimates on piece-dyed goods now made by our silk experts are as nearly correct as it is possible for such calculations to be.

EXPERTS' AND MANUFACTURERS' STATEMENTS OF COST.

Having detailed the manner in which our silk experts proceed to establish the cost of production, the next inquiry that naturally presents itself is, how do the experts' calculations compare with the statements of cost of production made by the manufacturers in compliance with the act of June 10, 1890, and how can the difference between these two estimates be accounted for?

There is much difficulty in establishing fixed rules concerning the cost of production, but I am assured by various manufacturers that there can be no greater difference in the cost of the same article to the different manufacturers under consideration than 3 or 4 per cent. in the extreme. In discussing in detail the statements of the various manufacturers I have taken as the basis what has been said under the heading, "elements of cost of production," and compared it with manufacturers' figures.

Bardon, Ritton & Mayen.—The following table shows how the invoice prices of this house correspond with the experts' estimates of cost of production:

Width of goods.	Invoice price.	Experts' estimate of cost.
	<i>Francs.</i>	<i>Francs.</i>
47 centimetres.....	1.60	1.66
Do.....	1.90	1.87
59 centimetres.....	.82	.84
Do.....	1.68	1.65
Do.....	2.35	2.23
92 centimetres.....	1.44	1.46
Do.....	2.20	2.19
Do.....	2.75	2.75
Do.....	3.25	3.20

The invoice value averages seven-tenths of 1 per cent. above the cost of production, and, as it ostensibly includes 8 per cent. profit, there is a difference of 7.3 per cent. between experts' and manufacturers' calculations. This is caused by the manufacturers entering 2 francs per kilometre as the price of dyeing in colors, instead of 2.20 francs; by stating the winding and warping at 2 francs, instead of 3.50 francs; by putting the cost of weaving at figures realized only in exceptional cases, and by allowing but 4 per cent. for general expenses.

Bompiat & Favre.—The invoice prices of this house average 2.2 per cent. below the cost of production, as will be seen by examining the following table:

Width of goods.	Invoice price.	Experts' estimate of cost.
	<i>Francs.</i>	<i>Francs.</i>
46 centimetres.....	0.80	0.82
Do.....	.90	.93
48 centimetres.....	.95	.95
Do.....	1.55	1.67
60 centimetres.....	.90	.98
Do.....	1.05	1.09
Do.....	1.45	1.42
92 centimetres.....	1.60	1.54
Do.....	1.85	1.92
Do.....	2.35	2.40

The difference in estimates of 10.2 per cent. (8 per cent. profit and 2.2 per cent. under cost of production) is found as follows: Winding and warping of grege are not accounted for, being ostensibly included in the weaving, whereas the figures for the latter are quite too low for weaving alone; dyeing in colors is put at 2 francs per kilometre, instead of 2.20 francs net; finishing 48-centimetre widths at 4 centimes per metre, instead of 5 centimes; general expenses at 2 per cent., instead of 5 per cent.

Alexander Giraud & Co.—Invoice prices average 5 per cent. below the cost of production, as shown by the following table:

Width of goods.	Invoice price.	Experts' estimate of cost.
	<i>Francs.</i>	<i>Francs.</i>
60 centimetres.....	0.95	1.02
Do.....	1.05	1.13
Do.....	1.60	1.67
Do.....	2.05	2.16
92 centimetres.....	2.20	2.27
Do.....	2.00	2.26
Do.....	2.35	2.48
Do.....	2.55	2.60
Do.....	2.75	2.80
Do.....	3.00	3.14

The difference of 13 per cent. in the estimates is easily accounted for—only 1 franc per kilogramme is entered for winding and warping, for weaving the mere wages paid the workmen are stated, factory expenses are wholly disregarded, and general expenses put at 3 per cent. Mr. Leon Giraud, in explanation, says:

We inherited the business, our factory and store cost us nothing; hence we do not reckon expenses at much.

J. & P. Michel & Co.—This house manufactures its own goods and invoices at the cost of production.

Width of goods.	Invoice price.	Experts' estimate of cost.
	<i>Francs.</i>	<i>Francs.</i>
46 centimetres.....	0.93	0.94
Do.....	.98	1.00
Do.....	1.10	1.08
Do.....	1.18	1.20
Do.....	1.23	1.24
Do.....	1.40	1.45
Do.....	1.60	1.63
Do.....	1.80	1.80
59 centimetres.....	.90	.91
Do.....	.95	.98
Do.....	1.22	1.24
Do.....	2.15	2.20
92 centimetres.....	2.20	2.15
Do.....	2.50	2.45
Do.....	2.80	2.75
Do.....	3.00	2.92

The only difference in the estimate is the 8 per cent. profit ostensibly included in Michel's figures. Nearly all the items of cost are satisfactorily stated by this house—winding and warping are put at 3.50 to 3.85 francs per kilogramme, 5 per cent. general expenses are allowed, quantity and quality of raw material are quite correctly stated. For weaving, however, only the price paid the workman is entered, without regard to factory expenses; it is this item that causes the difference.

E. Chevillard.—Invoice prices average 2.1 per cent. below experts' estimate of cost of production, as shown by the following table:

Width of goods.	Invoice price.	Experts' estimate of cost.
	<i>Francs.</i>	<i>Francs.</i>
48 centimetres.....	1.57	1.54
Do.....	1.70	1.76
Do.....	2.05	2.12
60 centimetres.....	1.22	1.24
Do.....	1.30	1.28
Do.....	1.52	1.45
Do.....	1.60	1.54
Do.....	2.10	2.36
92 centimetres.....	2.75	2.80
Do.....	3.45	3.58

Here again there is a difference of 10.1 per cent. in the two valuations. A slight difference is found in nearly all the items.

At this writing Chevillard has just lowered his prices 3 to 5 per cent., as he says that he has purchased his silk at lower rates.

Gindre & Co.—Invoice prices average 7.9 per cent. below cost of production, the difference between experts' and manufacturers' calculations being 15.9 per cent.

Width of goods.	Invoice price.	Experts' estimate of cost.
	<i>Francs.</i>	<i>Francs.</i>
47 centimetres.....	0.77	0.81
Do.....	1.15	1.30
48 centimetres.....	1.40	1.49
Do.....	1.60	1.71
Do.....	1.70	1.81
60 centimetres.....	1.05	1.22
Do.....	1.25	1.30
92 centimetres.....	2.25	2.35
Do.....	2.75	3.05

MARKET VALUE AND SUMMARY.

Though it is not properly a part of my inquiry, I will say a few words concerning the "market value." This term may be taken as meaning the price at which the goods are offered for sale in large quantities and in the usual course of trade. Manufacturers do not work for nothing, but it is difficult to say what is the average profit on piece-dyed goods. However, I believe that the manufacturers under consideration would generally sell at wholesale for 4 per cent. above the experts' statement of cost. This statement of cost, it must be remembered, is inclusive of all expenses, and manufacturers could sell at that price without loss, but, of course, they would merely get back their invested capital without any profit.

In summing up the whole matter I would say that I have reached these conclusions: That the experts' estimate on piece-dyed goods are now entitled to full faith and fairly represent the cost of production of the goods; that if 4 per cent. be added to their statement of cost it will give as nearly as possible the market value for wholesale quantities.

CARL A. HANSMANN,
Consular Clerk.

UNITED STATES CONSULATE,
Lyons, November 27, 1890.

Railways in Syria.—To the various railway projects in Syria must be added a scheme for a steam tramway between the cities of Beirut and Damascus, traversing Mount Lebanon, the Beckâ (or Cœle-Syria), and Anti-Lebanon, a distance of 70 English miles.

The project, it would seem, has lately been examined by the council of ministers in Constantinople and sent back by that body to the ministry of public works, with a request to make certain modifications regarded by the council as necessary.—ERHARD BISSINGER, *Consul, Beirut, December 26, 1890.*

THE PORT AND TRADE OF SABANILLA.

REPORT BY CONSUL NICKEUS.

I have the honor to transmit to the Department, in answer to communications from parties in the United States who are contemplating the establishment of a line of steamers to ply between Galveston and the cities of this coast, a report in answer to the following questions:

- (1) What is the best seaport in your (this) vicinity?
- (2) What is the depth of water on the bar?
- (3) If steamers have to lighter, what is the lighterage?
- (4) What are the port duties?
- (5) What articles of American goods are imported, and what is the duty on each article?
- (6) What articles are exported, and what is the export duty, if any?
- (7) Give names of responsible merchants of this city.

I answer the interrogatories in the order in which they are put as well as I can.

(1) Sabanilla Bay is by far the best seaport in this vicinity.

(2) The depth of water on the bar at the mouth of the Magdalena is from 10 to 20 feet, but is constantly shifting; therefore, exceedingly dangerous. Vessels have not crossed it for several years. All vessels are loaded and unloaded in Sabanilla Bay from and on lighters, and the merchandise is conveyed to Barranquilla by rail.

(3) Steamers use lighters at present, but a pier 3,300 feet long is being built and will be completed in 10 months, which will supersede this necessity of lighters. Lighters cost from \$25 to \$30 per day. As a rule, vessels bringing freight from the United States deliver the same at Port of Colombia, and the merchant is required to get the goods to Barranquilla from the ships at his own risk and expense. The railway company usually takes the goods from the ship and delivers them in the custom-house at Barranquilla for so much a ton, according to class of goods.

(4) The port duties are \$1 on each bill of lading and about \$10 for the clearing of each vessel.

(5) I give you the principal articles imported from the United States, with the duty thereon:

	Duty per kilogramme.
Flour.....	\$0.05
Hog products.....	.20
Hardware.....	\$0.01 to 1.00
Lumber:	
Planed and cabinet.....	.01
Cut, squared, and boards not planed.....	Free.
Wood manufactures.....	.40
Beer.....	.05

These rates of duty are given in Colombian money, which is worth about 50 cents American to the dollar.

(6) I append table showing kind, amount, and value of goods exported during the year 1889 and the places to which said goods were shipped.

Table showing the amount and value of exports from the port of Sabanilla, per steamers, for the year ended December 31, 1889.

Articles.	London.	Liverpool.	Swansea.	Havre.	Paris.
Balsam.....packages...	29			55	30
Bark.....do.....	401			94	241
Bird skins.....do.....	2				1
Cocoa.....do.....	336	36		45	100
Coffee.....do.....	24,281	132		6,916	657
Cotton.....bales.....		207		1,590	
Cotton seed.....packages...		1,465		2,763	
Dividivi.....do.....		4,259		2,284	
Fustic.....logs.....		7,500		2,803	
Hides.....number.....	2,002	65		704	100
Ivory nuts.....packages...	659	711			
Mineral.....do.....	45	335	7,507		600
Plants.....do.....	873				
Rubber.....do.....	1,084			193	68
Sarsaparilla.....do.....	14				
Sundries.....do.....	142	1		131	253
Total.....do.....	29,808	14,731	7,507	17,578	2,040
Total weight.....kilogrammes...	1,727,180	663,160	450,490	1,170,500	120,110
Total value:					
Produce.....	\$585,095	\$37,314	\$225,210	\$243,049	\$52,120
Treasure.....	2,755,871				969,550
Total.....	3,340,966	37,314	225,210	243,049	1,021,670

Articles.	Bremen.	Hamburg.	New York.	Antilles.	Carthagea.
Balsam.....packages...	80	187	817		
Bark.....do.....			769		
Cigars.....do.....	1	1		16	30
Cocoa.....do.....	159	73	327	248	
Coffee.....do.....	3,660	4,902	74,503	21	1,726
Dividivi.....do.....		1,785		20	
Fustic.....logs.....		3,956	2,360		
Goatskins.....bales.....		2	524		24
Hats.....packages.....				240	
Hides.....number.....	1,012	2,432	196,588	273	6,393
Ivory nuts.....packages...	3,554	2,073			
Mineral.....do.....		6,898	3,005		124
Plants.....do.....		8	172		
Rubber.....do.....		75	1,283		88
Sarsaparilla.....do.....			26		
Sleepers.....logs.....				8,710	
Sundries.....packages...	24	44	132	131	178
Tobacco.....do.....	23,148	1,109	123	904	735
Total.....do.....	36,638	23,534	280,699	10,573	9,298
Total weight.....kilogrammes...	2,114,690	1,189,300	6,988,300	977,810	248,800
Total value:					
Produce.....	\$568,155	\$369,238	\$2,712,250	\$191,415	\$93,865
Treasure.....	1,285	13,231	198,610	2,972	4,404
Total.....	569,440	382,469	2,910,860	194,388	98,269

Table showing the amount and value of exports from the port of Sabanilla, etc.—Continued.

Articles.	Colon.	Spain.	Total.		
			Number of packages.	Weight.	Value.
				<i>Kilos.</i>	
Balsam.....packages.....			1,188	71,280	\$71,280
Bark.....do.....			1,505	90,300	75,250
Bird skins.....do.....			3	150	1,500
Cigars.....do.....			48	2,400	7,200
Cocoa.....do.....			1,324	79,440	33,100
Coffee.....do.....	142	138	117,088	7,025,280	2,341,760
Cotton.....bales.....			1,797	359,400	89,850
Cotton seed.....packages.....			4,228	295,960	4,228
Dividivi.....do.....			8,348	417,400	8,348
Fustic.....logs.....			16,639	499,170	8,320
Goatskins.....bales.....	10		560	33,600	11,200
Hats.....packages.....			240	14,400	144,000
Hides.....number.....			209,569	2,095,690	1,047,845
Ivory nuts.....packages.....			6,997	489,790	34,985
Mineral.....do.....			18,514	1,110,840	555,420
Plants.....do.....			1,053	52,650	31,590
Rubber.....do.....			2,731	273,100	68,275
Sarsaparilla.....do.....			40	2,400	1,200
Sleepers.....logs.....	4,378		13,088	1,308,800	26,176
Sundries.....packages.....	771	59	1,866	111,960	18,660
Tobacco.....do.....	128		26,147	1,830,290	522,940
Total.....do.....	5,429	197	412,973		
Total weight.....kilogrammes.....	502,140	11,820		16,164,300	
Total value:					
Produce.....	\$22,066	\$3,350			5,103,127
Treasure.....	78,544				5,024,468
Total.....	100,610	3,350			9,127,595

Table showing exports for 17 years.

Year.	Number of packages.	Amount of wood.	Weight of packages and wood.	Value.		
				Produce.	Treasure.	Total.
		<i>Tons.</i>	<i>Kilos.</i>			
1873.....	266,289	731	14,198,560	\$4,935,340	\$2,781,397	\$7,716,737
1874.....	296,399	567	16,255,136	5,323,699	3,441,087	8,764,786
1875.....	313,302	1,369	16,738,480	5,144,910	2,937,130	9,082,040
1876.....	215,937	1,225	11,169,790	3,091,614	3,893,626	6,885,240
1877.....	230,509	572	11,229,390	3,672,100	3,128,045	6,800,145
1878.....	328,928	845	14,398,950	5,084,405	3,839,766	8,924,171
1879.....	337,764	860	15,258,380	6,077,317	3,272,168	9,349,485
1880.....	390,360	800	14,922,550	6,309,287	2,842,931	9,152,218
1881.....	423,342	1,085	15,862,550	9,055,669	3,343,940	12,399,609
1882.....	412,520	1,284	15,624,600	8,257,402	3,137,653	11,395,055
1883.....	550,652	5,838	20,199,750	6,999,955	3,951,126	10,951,081
1884.....	421,886	887	13,856,220	6,194,092	4,352,276	10,546,368
1885.....	151,071	59	5,029,580	1,593,235	2,214,616	3,807,851
1886.....	407,759	664	13,438,460	4,526,354	3,264,594	7,790,948
1887.....	441,184	3,140	14,985,240	4,137,711	3,606,474	7,744,185
1888.....	505,733	4,423	18,179,860	4,749,644	4,521,521	9,271,165
1889.....	432,973	1,803	16,164,300	5,103,127	4,024,468	9,127,595

I am quite sure that trade both in imports and exports has varied but little in the last 3 years. In the years 1881, 1882, 1883, and 1884, owing to the demand for beef cattle on the Isthmus of Panama during the construction of the Panama Canal, the exports were much larger, as appears from the table mentioned; otherwise there has been little difference in the exportations from this consular district since 1878. Nine-tenths of all the imports and exports of the Republic of Colombia pass through Barranquilla.

During the last 12 months about 78,000 packages were delivered at this port by the Atlas steamers, each package weighing an average of 125 pounds. This same line of steamers took from this port \$2,425,590.41 worth of goods (value in gold) to New York; of this amount other vessels may have carried out, perhaps, \$100,000 worth.

Their enterprise is looked forward to with much interest by the merchants of this city with whom I have spoken. They believe, as I do, that another line of steamers between here and the southern ports of the United States would be of mutual benefit to the people of both sections, and they promise to aid the enterprise by their patronage.

JOHNSON NICKEUS,

Consul.

UNITED STATES CONSULATE,

Baranquilla, January 1, 1891.

RESOURCES OF THE AMAZON VALLEY.

REPORT BY CONSUL KERBEY, OF PARA.

The Amazonian valley extends generally due westward for 2,000 miles. between the equator and 5° south latitude and between 30° and 75° west longitude.

Figuratively, South America resembles, in outline on the map, a shoulder of beef, of which Patagonia may be likened to the shank, while we at Para are in the tenderloin. A horizontal line drawn along the eastern coast of North America would pass to the west coast of South America. The most easterly point of Brazil, New Pernambuco, may be said to be in the middle of the Atlantic. The coast line of north Brazil extends almost east and west for 1,000 miles, facing the United States, while the old-gold colored waters of the Amazon, curving toward the Gulf Stream, mark a path in the ocean for hundreds of miles, inviting commerce to come hither from our country. North Brazil is commercially the nearest or closest to the United States. This portion of the new Republic is in almost every respect entirely distinct from the southern States of Brazil.

There is no communication from the capital at Rio de Janeiro to this part of the Government except by the 2,000 or 3,000 miles of coast navigation, to which may be added another 1,000 miles of river transportation to reach the State of Amazonas.

Politically, these States have recently emphasized their satisfaction with the Republic and their adhesion to the General Government at Rio de Janeiro, but it is being generally discussed, or hoped, among some of the foreign people resident here that the time is not far distant when there will be a separation. Undoubtedly the wish is father to the thought. In this case all true Brazilians and the friends of Brazil sincerely hope that the "secession in thought" may never materialize.

Certain it is that the Amazon valley, by its naturally rich and abundant resources, contributes most to the General Government. It is estimated that the export duties on crude rubber will aggregate the revenue derived from both coffee and sugar. Rubber is worth 61 cents a pound, while coffee and sugar are less than one-sixth of this.

As indicated in reports on trade and transportation and rubber, there is as yet practically nothing produced in the valley. Everything necessary to support civilized life is imported, generally from Europe.

The General Government gets all the revenue from imports. The people here are, therefore, in a manner dependent upon the southern provinces for their *farinha*, or mandioca, the flour of the country.

India rubber is at present the one great industry and resource of the Amazon.

The only reason why there is almost no agriculture in this valley is because rubber-gathering, although more dangerous to health, pays immense returns for the labor invested. This keeps a large part of the native population at the margins of the rivers and in the swamps, where the malaria and fevers cut them down rapidly. It is said there was more agriculture in this valley 25 years ago than now. Villages once prosperous are now falling into decay, the fast-growing foliage almost covering them from sight. The enterprising people have gone to the cities or to the rubber swamps.

Notwithstanding these obstacles, the agricultural possibilities of the valley are great, almost beyond comprehension. The soil is fertile, and there are never any droughts or frosts or grasshopper plagues. The products are mostly tropical.

The almost exclusive breadstuffs of the temperate zones will not grow here. Wheat, barley, oats, and rye grow rank as far as straw is concerned, but produce no kernels of grain. Potatoes grow well of a fair quality, but the yield is exceedingly small. Corn yields abundantly, but it is used for food only when other food fails, because it is too heating to the blood. A hunk of johnnycake as big as one's fist will produce a nettle rash all over the body within 24 hours after eating, though foreign corn eaten here does not have any such effect. Consequently, rice and mandioca are the only breadstuffs that will ever be raised in the valley. Rice grows spontaneously and mandioca with almost no cultivation, except cutting and burning off the brush and sticking the joints of the stems into the ground. Six or 8 months later the roots are pulled up and made into meal (*farinha*). As it has not the phosphatic elements that make wheat the prime breadstuff of the world,

the Amazon valley will always be a gradually increasing market for wheat flour, in spite of the richness of its soil.

Sugar cane grows luxuriantly. In many places it is only necessary to burn off the grass and reeds and scatter the pieces of sugar-cane stalks over the surface of the ground. They will sprout and take root without being planted in the ground and will yield two crops a year for 12 years without cultivation and without planting. That, of course, is on low land. On high land the cane "runs out" in 4 or 5 years and begins to produce an inferior quality of sugar. The cane yield is then burned over and a new crop planted. But the price of labor is so high since the rubber fever began that it does not pay to make sugar here. Nearly all the sugar cane is turned into rum, but, even so, it supplies only a small part of the rum consumed.

Bananas and oranges and a great variety of other edible fruits grow in greatest abundance and with very little labor.

Coffee grows luxuriantly, but is said to be of quality inferior to that produced further south.

The only agricultural product exported from the Amazon valley is cacao, from the seed of which chocolate is manufactured by roasting and grinding. Its culture is very remunerative, and it gives quick returns for outlay. The trees begin to bear in paying quantities at the age of 3 years and are still vigorous and productive at the age of 100 years. The labor of planting is slight, and the after care is simply to keep parasitic plants from the branches and gather the fruit. The foliage forms so dense a shade that no form of vegetation will spring up in a cacao orchard after the trees are 5 or 6 years old. The only weeds are those which grow on top of the trees, and these are easily destroyed. The present cacao orchards are all, or nearly all, on low land. It has not yet been proved that cacao would yield profitably on high land. When there is lack of rain at the fruiting season or the floods fail to reach high enough to fill the soil with water, the crop is a failure. Irrigation, however, would be extremely easy on the lands where cacao is raised. This crop will always be one of the most valuable for the Amazon farmer, who can have his cacao orchard on the elevated river front and his cattle and rubber-tree plantations on the lower flood plains between there and the distant hills.

Cotton grows well and yields a fair quality of fiber; but as yet it has not been planted to any great extent, especially since rubber-gathering began to call away so large a part of the population. The American colony at Santarem, however, is planting a crop of cotton for the coming season and bringing from the United States the machinery for working it up into white cotton cloth. The experiment is being tried, not without some misgivings and with a good outlay of American pluck, that has already braved unnumbered difficulties in many new and untried industries, only to find that most of them had some drawback that made them impracticable. I hope to visit this colony soon and be able to report more fully on their progress.

The lowlands, where the yearly floods prevent the growth of forests, are magnificent grazing lands; but the small farmer, with 50 or 100 cattle, would be at a great disadvantage. His house would be on the narrow, elevated margin of the river, channel out of the reach of the annual flood. His pasture land is back of his house, on a lower level, and under water from 1 to 3 months in the year. He must generally have some higher land somewhere, perhaps 10 miles away across the flats (*varzea*) at the bluffs that border the river plain, for the high ground on which his house stands is forest and affords no pasture. He must also have money enough to hire a steam tug and a barge to take his cattle to this distant land if the flood rises suddenly and unexpectedly, as it often does.

During the present season the floods have been rather higher than usual, and, from the lack of means for transporting cattle that were unexpectedly imprisoned on the narrow ramparts between the river channels and the flood plains, it is estimated that over 30,000 head of neat cattle and 5,000 horses and mules have died of starvation and pestilence this year on the lower Amazon above the delta.

JOSEPH O. KERBEY,

Consul.

UNITED STATES CONSULATE,

Para, December 11, 1890.

LABOR LEGISLATION IN EUROPE.

REPORT BY CONSUL GOTTSCHALK, OF STUTTGART.

On January, 1, 1891, a new law relating to laborers and their protection in case of their inability to work by reason of sickness or old age took effect in the German Empire after having been adopted in the Reichstag by a vote of 185 to 165 on May 25, 1889, through the influence of Bismarck. The principal features of this law, with a short review of the legislation of other states in that direction, may be of interest to the American public, where like questions are constantly discussed.

The new law of the German Empire provides that every person, male or female, 16 years of age or over, and occupying the position of laborer, servant, or clerk, whose wages or salary amounts to less than 2,000 marks* (\$476) per year must have himself or herself insured. The premium for this insurance is paid in equal parts by the employer and employé, and the Government itself contributes to each policy the sum of 50 marks annually. The insurance companies are State institutions under the control of, and operated by, the State, and the post-office employés, as well as policemen and other subordinates, attend to the serving of notices and collection of dues. The premiums to be paid are in proportion to the wages received and are divided into four classes, as follows: (1) Those earning 350 marks per year or less pay a premium per week of 14 pfennigs (3 cents); (2) those earning from

* 1 mark = 23.8 cents.

350 to 550 marks per year, 20 pfennigs (4.7 cents); (3) those earning from 550 to 850 marks per year, 24 pfennigs (5.7 cents); (4) those earning from 850 to 2,000 marks per year, 30 pfennigs (7 cents).

Of these above weekly amounts the employer pays one-half, but proof of sickness or military services exempts the employé from his contributions.

In case of inability to work (except from accidents or mishaps, for which special provision is made under former laws by the accident insurance, which is also compulsory), which inability is determined by the fact that the insured is by disease unable to earn one-third of the amount of his former wages, the benefits are as follows: First class receives annually 114.70 marks; second class, 124.10 marks; third class, 131.15 marks; fourth class, 140.55 marks. But he may receive more if he shows that for a long time his dues have regularly been paid. But there is this further condition, that before the insured receives anything he must have paid his contributions for at least 47 weeks and was employed for 5 years before his disability occurred, but such employment need not have been continuous or uninterrupted; it suffices if he worked 235 weeks during that period.

The age insurance provides that every person who attains the age of 70 years receives a pension from the State which amounts annually, in the first class, to 106.40 marks; in the second class, to 134.60 marks; in the third class, to 162.80 marks; in the fourth class, to 191 marks.

This law goes into immediate effect; that means the pension will accrue to every one who reaches 70 years after January 1, 1891, whether able to work or not, provided that he worked for 3 years prior to that date, that is to say, at least 141 weeks since January 1, 1888. But, if he was sick during that time or his employer had no work for him (but not in excess of 4 months), the time so lost is counted as if he had worked. And the law also applies to persons who attained the age of 70 years prior to January 1, 1891. All contributions cease after that age, and, in case any employer who was insured and paid his contributions for at least 5 years dies before reaching the age of 70, then one-half of all paid by him will be returned to his wife and children. Every female may, in case she marries, also demand the return of one-half of her premiums. It is calculated that 11,000,000 persons will be subject to this compulsory insurance law, and the amount required for its operation will be about 220,000,000 marks, of which the employés, employers, and the taxpayers (which means the State) pay one-third each. The payments are made in this manner. Each employé is furnished with a book in which stamps designating the amount paid are to be gummed in. These stamps are sold by the Government and are to be purchased by the employer, who may deduct one-half from the wages of the employé. Further provisions are made for cases when an employé becomes his own master or employer, and there are also penalties for violation of the law.

This law is auxiliary and intimately connected with the two other laws in force for some time relating to the compulsory insurance against sickness and accidents. As to the first, every laborer employed in mines, factories,

railroads or shipping wharfs, building trade, machinery, or common carriers must be insured. The amount to be paid for such insurance is a sum not exceeding 2 per cent. of the daily wages, and must be paid in the proportion of two-thirds by the laborer and one-third by the employer.

In regard to the insurance against accidents, the same is confined principally to factories, and here the employer must pay the entire premium. In connection therewith the law regulating the liability of employers for accidents to their employes provides that the party injured may recover damages, and, if he was an employé of a steam, street, or railway company, the very fact that the accident occurred is *prima facie* evidence that the railroad is to blame, which, however, may prove that the cause of the accident was the own fault of the party injured or was caused by some superior force which could not be foreseen. In all other cases against factories and like institutions the burden of establishing negligence is on the party seeking to recover. But by the law regulating compulsory insurance against accidents it is further provided that employes subject to such laws can only claim damages if they establish that the employer intentionally inflicted the injuries complained of. In addition to all this there is a law which establishes and regulates the support of the poor by the town or township of which the party has been a resident for 2 years past. In case such party becomes impoverished at a place other than his home, he may be sent to his place of residence; but laborers or servants, in case of sickness, must be supported, if necessary, for 6 weeks by the community where the misfortune befel him or her.

Germany seems to be far ahead of all other states so far as legislation for the protection of laborers is concerned, but in some respects Switzerland is more liberal in that respect.

The law in Switzerland makes the happening of an accident *prima facie* evidence, and it only releases the employer from liability in case he may show that the accident was caused by superior force or criminal act of a third person or by the own fault of the deceased or injured party. And, in cases where any business detrimental to health is being carried on, the owner is also liable in case the employé contracts any disease caused by such business, as, for instance, match factories, white lead and mirror factories, wall paper factories (where arsenic is used). The law there further requires a record to be kept by the owner of all accidents, cases of sickness, or deaths apparently caused by the business in which the laborer is engaged, and embraces all factories, railroads, steamboats, telegraphs, telephones, buildings, quarries, mines, etc.

Another feature, which is also found as yet only in Austria, is the law which fixes the maximum time during which labor can be demanded. That time is 11 hours per day, and on Saturdays or days immediately preceding holidays it is 10 hours. It applies to all persons over 14 years of age, and prohibits work by all under that age, and prohibits night work for females and for boys under 18 years. There are tribunals which, under exceptional or pressing circumstances, may extend the time of labor to a limited degree,

but that is seldom done. All female married laborers must have a rest of $1\frac{1}{2}$ hours at noon. There was at first great opposition to this law; but employers and laborers have acquiesced, and the former class have discovered that the disadvantageous results expected did not follow the enactment of this law. There is no proposition to change the law, only to extend it so as to reduce the working-day to 10 hours.

The law in Switzerland is especially significant, as that country has many and important industries and manufactories, principally for the export trade. Its products—clocks, watches, machinery, yarn, and silk embroidery—come into competition with the products of other states. The country is divided into three districts; for each one an inspector is appointed, with an assistant, whose duty is to see that the law is carried out. They must visit each factory at least once every 2 years. There are in Switzerland twenty-three hundred and twenty-two factories, employing 1,160,000 laborers.

Another important feature is that the rules of each factory must be submitted for approval to the proper tribunal and must first be brought to the attention of the laborers, so that they may have an opportunity to express their opinion. This is done by posting up notices that such rules are in the office open to inspection, and that any objection should, within a specified time, be filed with the owner or with the tribunal. Mr. König, who is privy councilor in the department of trade in Berlin, has lately—probably at the instigation of his Government—made an investigation of the operation of this law, and the result of said observation has been published and is very favorable.

The Swiss law seems to be regarded as a precedent, and the satisfaction which it gives encourages the laboring classes of Germany to have it also enacted in their own country, and with considerable hope of success. If they succeed, Germany will undoubtedly be the foremost of all governments in reference to its legislation for the protection of labor, for no other country has as yet adopted the system of insurance against sickness, accidents, disability, and old age to such an extent as Germany. Naturally, the results will be watched with great interest.

LOUIS GOTTSCHALK,
Consul.

UNITED STATES CONSULATE,
Stuttgart, February 3, 1891.

Corset steels.—Two gentlemen of Belleville wish to learn the address of some American manufacturer of the steel used in making the steels for corsets. There is an establishment in Gananoque, Ontario, which manufactures corset steels. These gentlemen desire to ascertain what American steel prepared for making corset steels will cost them when it is laid down in Belleville.—S. H. DENEEN, *Consul, Belleville, March 2, 1891.*

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES.

No. 127.—APRIL, 1891.

ISSUED FROM THE BUREAU OF STATISTICS, DEPARTMENT OF STATE.
ALL REQUESTS FOR THESE REPORTS SHOULD BE AD-
DRESSED TO THE SECRETARY OF STATE.



WASHINGTON:
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1891.

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC

No. 127.—APRIL, 1891.

AMERICAN FLOUR TRADE IN ENGLAND.

REPORT BY CONSUL-GENERAL NEW, OF LONDON.

I have the honor to inclose a letter from the London Flour Trade Association, bringing to my attention what seems to be a most serious state of affairs in the importation of American flour into this country, a business which in late years has attained such large dimensions.

I am well acquainted with the high character of the merchants composing the London Flour Trade Association, and their statement of the causes which are hampering the trade, *i. e.*, the unsatisfactory terms of the through bill of lading and the delays in transit, is so clearly put that there is no necessity for my enlarging upon the matter.

JNO. C. NEW,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
London, February 10, 1891.

[Inclosure in Consul-General New's report.]

LONDON FLOUR TRADE ASSOCIATION,
CORN EXCHANGE, 41 SEETHING LANE,
London, E. C., February 5, 1891.

To the Consul-General of the United States of America.

SIR: I am desired by the executive committee of the London Flour Trade Association (which includes nearly all the London importers of, and the wholesale dealers in, American flour) to place before you certain grievances under which this trade is suffering, in the hope that you may see your way to report the matter to your Government.

As you are probably aware, the exports of flour from the United States are mostly direct from the mills to the United Kingdom and already reach a large total, those for 1890 being

No. 127—1.

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equal to 12,025,800 cwts., out of a total export of wheat and flour of 29,226,863 cwts., which quantity might be largely increased by a better system of transport. At present all flour sent here from an inland station is sent on what is called a through bill of lading (one of which I now inclose), the terms of which are fixed by a combination of all the principal United States railways, so that, although it is supposed to be a free contract between the miller and the transportation company, it is in reality no such thing, as the miller, refusing to forward his flour on the one-sided document offered him, simply has to keep it or sell it in the United States. If you will be good enough to look at the document above referred to, you will observe that the transportation companies contract themselves out of nearly every liability except that of receiving the freight; but among the many drawbacks and risks taken by the acceptor of this bill of lading that of delay in transit stands out preëminently as the most serious. As you will notice, the transportation companies do not undertake to deliver the goods in any particular time, and, in fact, do take any time from 4 to 16 weeks to get the flour to its destination; and it has been found by careful investigation that the delays are, in a large majority of cases, caused by the railway companies, they (having made no contract with a time limit) caring nothing for the delays which take place.

The terrible irregularity of this service has reached such a pitch that the trade with this country is most seriously hampered, no buyer being able to tell within many weeks when he is likely to receive his purchase; and we wish to impress upon you the fact that such a state of things resolves itself into a serious tax on the export of flour from your country, inasmuch as a large discount in price has to be allowed the buyer when taking the risks above referred to. The committee wish you to understand that, before asking for your valuable assistance in this matter, they have, individually and collectively, done all in their power to obtain a fair document, naming at least a reasonable time limit, but without the least effect, the combination interested in the present document being far too strong. May I ask you, therefore, to embody the above facts in any report you may be sending your Government on the trade of this country, drawing particular attention to the effect they have on the exports of flour; and I would also ask you to be good enough to receive a small deputation from our association, with a view to explaining any matters in the above statement which may not be clear to you. A deputation will be pleased to wait upon you at any time that may be convenient to you.

I am, etc.,

PERCY E. PHILLIPS,
Honorary Secretary.

BILL OF LADING.

THE WESTERN TRANSIT COMPANY, THROUGH FREIGHT LINE VIA THE LAKES, THE NEW YORK CENTRAL AND HUDSON RIVER RAILROAD AND CONNECTIONS, AND THE FURNESS LINE OF BRITISH STEAMSHIPS.

S. D. Caldwell, general manager, Buffalo, N. Y.; William James, general foreign freight agent, New York; Edward Walley, foreign freight agent, Boston, Mass.; Hugh MacMillan, agent, Chicago, Ill.; J. C. McClintock, agent, Milwaukee, Wis.; Charles Wilks, agent, Minneapolis, Minn.; H. S. Bolcom, agent, Winona, Minn.

Through bill of lading No. 86. Contract No.—Talbot, 812; Walley, 532.

From Minneapolis, Minn., to London, England.

Shipped in apparent good order by Columbia Mill Company, the following property, marked or numbered as below (weight, measure, gauge, quality, condition, quantity, brand, contents, and value unknown), weight subject to correction:

Marks and numbers.—Trojan 91-92-92. Mil., 36250; C. & N. W., 32448; C. S. L., 4468—200 sacks each.

Merchandise.—Six hundred sacks of flour.

Through rate, \$30.62 (gold) per 100 pounds; gross weight, 84,000 pounds.

Notify Fillman & Phillips.

The property covered by this bill of lading is subject to all the conditions expressed in the customary forms of bills of lading in use by said steamships or steamship company at time of shipment.

To be delivered in like good order and condition at the port of London, England (or so near thereto as ship may safely get, with liberty to call at any usual port of call), unto Columbia Mill Company, or his or their assigns, upon payment in cash of freight due thereon immediately on discharge of the property at the rate of \$30.62, American gold, per 100 pounds gross weight, and advanced charges, without any allowance for credit or discount, £1 being considered equal to \$4.80, American gold (general average payable according to York-Antwerp rules), under the following terms and conditions, viz :

(1) That said the Western Transit Company and its connections which receive said property shall not be liable for breakage of packages of eggs, or rust of iron and of iron articles, or for loss or damage by wet, dirt, fire, or loss of weight, or for condition of baling on hay, hemp, or cotton; nor for loss or damage of any kind on any article whose bulk requires it to be carried on open cars; nor for damage to perishable property of any kind occasioned by delays from any cause or changes of weather; nor for loss or damage on any article or property whatever by fire or other casualty while in transit or while in depots or places of transshipment, or at depots or landings at all points of delivery; nor for loss or damage by fire, collision, or the dangers of navigation while on seas, rivers, lakes, or canals. All goods or property under this bill of lading will be subject, at its owner's cost, to necessary cooperage or baling, and is to be transported to the depots of the companies or landings of the steamboats or forwarding lines at the points receipted to for delivery.

(2) It is further agreed that said the Western Transit Company and its connections shall not be held accountable for any damage or deficiency in packages after the same shall have been receipted for in good order by consignees or their agents at or by the next carrier beyond the point to which this bill of lading contracts. Consignees are to pay the freight and charges upon the goods or merchandise in lots or parts of lots, as they may be delivered to them.

(3) It is further stipulated and agreed that, in case of any loss, detriment, or damage done to, or sustained by, any of the property herein receipted for during such transportation, whereby any legal liability or responsibility shall or may be incurred, that company alone shall be held answerable therefor in whose actual custody the same may be at the time of the happening of such loss, detriment, or damage, and the carrier so liable shall have full benefit of any insurance that may have been effected upon or on account of said goods.

(4) And it is further agreed that the carrier shall not be liable for any discrepancy between the contents of the package and the description of the same in the bills of lading.

(5) And it is further agreed that from and after the arrival of said goods at the port of East Boston, and while said goods remain on the wharf or wharfs waiting for further conveyance, the Western Transit Company shall not, nor shall any of its connections, inland or ocean, be liable for delay, nor shall they or any of them be liable in respect of said goods, otherwise than as warehousemen. It is also agreed that, in case the whole or any part of the property specified herein be prevented from any cause from going on the first steamer of the line above stated leaving after the arrival of such property at said port, the Western Transit Company is at liberty to forward the same by succeeding steamers of said line, or, if deemed necessary, in the steamers of any other line.

(6) And it is further agreed that this contract, on the part of the Western Transit Company, is accomplished, and the liability of the Western Transit Company hereunder terminates, on the delivery of the goods or property to the steamship or steamship line, her or its agent, servants, or on the steamship pier at port of East Boston, when the responsibility of the steamship or steamship line begins, and not before.

It is mutually agreed that, in respect to the transportation from the port of East Boston to port for destination, the ship shall have liberty to sail without pilots, to tow and assist vessels in distress, to deviate for the purpose of saving life or property; that the carrier shall have

liberty to convey goods in lighters to and from the ship at the risk of the owners of the goods, and, in case the ship shall put into a port of refuge or be prevented from any cause from proceeding in the ordinary course of her voyage, to transship the goods to their destination by any other steamship.

It is also mutually agreed that the carrier shall not be liable for loss or damage occasioned by causes beyond his control, by the perils of the sea or other waters, by fire from any cause or wheresoever occurring, by barratry of the master or crew; by enemies, pirates, or robbers; by arrest and restraint of princes, rulers, or people, riots, strikes, or stoppage of labor; by explosion, bursting of boilers, breakage of shafts, or any latent defect in hull, machinery, or appurtenances; by collisions, standing, or other accidents of navigation of whatsoever kind (even when occasioned by negligence, default, or error in judgment of the pilot, master, mariners, or other servants of the shipowners, not resulting, however, in any case, from want of due diligence by the owners of the ship or any of them, or by the ship's husband or manager); nor for heating, decay, putrefaction, rust, sweat, change of character, drainage, leakage, breakage, or any loss or damage arising from the nature of the goods or of the insufficiency of packages; nor for land damage; nor for the obliteration, errors, insufficiency, or absence of marks, numbers, address, or description; nor for risk of craft, hulk, or transshipment; nor for any loss or damage caused by the prolongation of the voyage.

I.—It is also mutually agreed that the carrier shall not be liable for gold, silver, bullion, specie, documents, jewelry, pictures, embroideries, perfumeries, works of art, silks, furs, china, porcelain, watches, or clocks in any respect, or for goods of any description whatever above the value of \$20 per cubic foot, and in no case is the carrier to be liable beyond \$500 per package, unless bills of lading are signed therefor, with the value therein expressed, and a special agreement is made.

II.—Also, that shippers shall be liable for any loss or damage to ship or cargo caused by inflammable, explosive, or dangerous goods shipped without full disclosure of their nature, whether such shipper be principal or agent, and such goods may be thrown overboard or destroyed at any time without compensation.

III.—Also, that the carrier shall have a lien on the goods for all freights, primages, and charges, and also for fines or damages which the ship or cargo may incur or suffer by reason of the incorrect or insufficient marking, numbering, or addressing of packages or description of their contents.

IV.—Also, that, in case the ship shall be prevented from reaching her destination by quarantine, the carrier may discharge the goods into any depot or lazaretto, and such discharge shall be deemed a final delivery under this contract, and all the expenses thereby incurred on the goods shall be a lien thereon.

V.—Also, that the ship may commence discharge immediately on arrival and discharge continuously, the collector of the port being hereby authorized to grant a general order for discharge immediately on arrival, and upon discharge the goods shall be at the risk of the consignee, and, if not taken by him within such time as is provided by the regulations of the port of discharge, they may be stored by the carrier at the expense and risk of their owners, and the responsibility of the steamship or steamship line for merchandise to be carried at a through rate to a point beyond the port of discharge shall terminate on the delivery of the goods or property to the next carrier.

VI.—Also, that full freight is payable on damaged or unsound goods; but no freight is due on any increase in bulk or weight caused by the absorption of water during the voyage.

VII.—Also, that, if, on sale of goods at destination for freight and charges, the proceeds fail to cover said freight and charges, the carrier shall be entitled to recover the difference from the shipper.

VIII.—Also, in the event of claims for short delivery when the ship reaches her destination, the price shall be the market price at the port of destination on the day of the ship's entry at the custom-house, less all charges saved, except a lower value of the articles has been agreed upon with the shipper and such value noted hereon.

IX.—Also, freight payable on weight is to be paid on gross weight landed from ocean steamship, unless otherwise agreed.

X.—Also, goods destined for a continental port, in the event of the continental steamer being prevented by ice from reaching destined port, the master reserves the liberty of either landing cargo at nearest open port he can reach with safety or bringing it back to port of transshipment, in either case at consignee's risk and expense, but charging outward freight only; or, should the last steamer of the season have sailed for the above destined port, the goods may be sent to the port nearest to their destination with which there is direct communication, or may be warehoused at the intermediate port at the expense and risk of the owners of the goods.

XI.—Parcels for different consignees collected or made up in single packages addressed to one consignee to pay full freight on each parcel.

And finally, in accepting this bill of lading, the shipper, owner, and consignee of the goods and the holder of the bill of lading agree to be bound by all of its stipulations, exceptions, and conditions, whether written or printed, as fully as if they were all signed by such shipper, owner, consignee, or holder.

Attention of shippers is called to act of Congress of 1851: "Any person or persons shipping oil of vitriol, unslacked lime, inflammable matches, or gunpowder in a ship or vessel taking cargo for divers persons on freight without delivering at the time of shipment a note in writing, expressing the nature and character of such merchandise, to the master, mate, or officer or person in charge of the loading of the ship or vessel shall forfeit to the United States \$1,000."

In witness whereof, the agent signing on behalf of the said the Western Transit Company, and of the said steamer or steamship company severally and not jointly, hath affirmed to two bills of lading, all of this tenor and date, one of which bills being accomplished, the others to stand void.

Dated in Minneapolis, Minn., this 25th day of August, 1890.

CHARLES WILES, Agent.

FRENCH SAVINGS BANKS.

REPORT BY CONSUL WILLIAMS, OF HAVRE.

I have the honor to inclose herewith translation of an important article on the condition of French savings banks, as taken from the last report of Minister Jules Roche to the President of France.

OSCAR F. WILLIAMS,

Consul.

UNITED STATES CONSULATE,

Havre, February 5, 1891.

SAVINGS BANKS.

[Inclosure in Consul Williams's report.—Translation.]

At the moment when the parliamentary commission instructed to prepare a new project of law on savings banks pursues actively its work, in order to deposit its report during the present session, it is interesting to examine the condition of these establishments as they existed a year ago, that is, December 31, 1889. It is, in fact, the last but one term during which the deposits were made in order to obtain a higher rate of interest than that allowed to-day.

When the figures for 1890 are known, we will compare them with the current year, and evidently we shall find matter for curious observations; but, as some months must elapse before then, let us examine rapidly those of 1889, as shown by the report addressed to the President of the Republic December 20 last (1890) by Mr. Jules Roche, minister of commerce, industry, and the colonies. According to this report the sum deposited in the ordinary savings banks for the year ended December 31, 1889, amounted to 2,683,595,803.64 francs (\$516,070,346.63),* and is subdivided as follows:

Books.	Amount.	
	<i>Francs.</i>	
20 francs (\$3.85) and under.....	15,072,903.64	\$2,898,635.19
21 to 100 francs (\$4.05 to \$19.23).....	50,161,575.88	9,616,156.90
101 to 200 francs (\$19.42 to \$38.58).....	70,316,091.95	13,522,325.37
201 to 500 francs (\$38.78 to \$96.15).....	238,632,087.61	45,890,786.07
501 to 1,000 francs (\$96.35 to \$192.30).....	453,883,990.73	87,285,382.83
1,001 to 2,000 francs (\$192.50 to \$384.60).....	1,016,976,183.35	195,572,322.95
2,000 francs (\$384.60) and above:		
Liable to be reduced within 3 months	823,666,035.71	158,397,314.48
Exempt from reduction by law.....	14,856,934.77	2,857,102.84
Total.....	2,683,595,803.64	516,070,346.63

The minister remarks that the books of less than 200 francs (\$38.58), although they contribute but a small part of the sum total of the deposits—135,500,000 of 2,500,000,000 francs (\$26,067,417.46 of \$516,070,346.63)—are nevertheless the most numerous, forming eleven-twentieths of the number of books (3,100,000 of 5,500,000), against one-twentieth of the amounts. We will add that, as far as we are concerned, these are the only ones that really merit attention; they represent, in fact, the workingmen's savings, who have not the means for making large investments and waiting until their capital becomes large enough to invest at larger interest. As regards the books which are higher—500 francs (\$96.35)—we must admit that these fill us with sad reflections. There are in France persons, who possess together exactly 1,470,860,000 francs (\$282,857,692.29), who can find no better way to invest their money than in the savings banks; there are 1,300,000 capitalists, some having 500 francs (\$96.15); others, 1,000 francs (\$192.30); in fact, others, 2,000 francs (\$384.60), who have confidence only in the State, and prefer to be contented with 3½ per cent. interest rather than to become owner of any share or obligation whatsoever. Amongst all the values quoted they can not find a single title which seems to them a sufficient security. This is—whatever may be the cause of this strange suspicion—a most regretful symptom; in fact, one of two things: either the persons of whom we speak have to do with the local banks, whose counsels do not appear to them worthy of following, or their financial education leaves much to be desired, since they do not understand the advantage they would have in receiving 4½ and 5 per cent. income and in having values such as we could recommend to our readers, instead of 3½ per cent. which the savings bank gives.

Happily, we can state that the number of these large deposits has diminished during the year 1889.

The new deposits, from 500 francs to 2,000 francs (\$96.15 to \$384.60), from January 1 to December 31, 1889, amount only to a total of 425,000,000 francs, whereas the reimbursements asked by the depositors of this category amount to 432,000,000 francs, a difference of 7,000,000 francs.

It will be interesting to state at the end of the present term to what amount the deposits of that volume will reach. There is every reason to believe that under the influence of the rate of interest being lowered they will have sensibly diminished.

*Reductions to United States currency are made on the basis of 5.20 francs to the Dollar.

EXPORTS TO THE UNITED STATES FROM GERMANY.

REPORT BY CONSUL-GENERAL MASON, OF FRANKFORT.

The statistics of declared exports to the United States during the year 1890 from the district of the consulate-general at Frankfort and from those of the several consulates under its supervision show the following comparison with the totals of the preceding year:

Consulates.	1889.	1890.	Increase.	Decrease.
Frankfort.....	\$3,351,424.61	\$3,864,569.88	\$513,145.27	
Aix la Chapelle.....	1,884,571.72	1,993,408.08	108,836.36	
Barmen.....	5,575,146.05	7,519,771.48	1,944,625.43	
Crefeld.....	5,436,838.36	6,010,884.02	574,045.66	
Cologne.....	2,358,093.87	2,841,621.04	483,527.17	
Dusseldorf.....	1,613,377.12	1,382,984.20		\$230,392.92
Mayence.....	1,848,640.88	2,306,752.44	458,111.56	
Mannheim.....	2,467,337.78	3,121,298.13	653,960.35	
Munich.....	1,027,605.84	1,230,919.10	203,313.26	
Nuremberg-Fürth.....	5,276,855.60	5,536,709.25	259,853.65	
Sonneberg.....	2,962,927.10	3,932,273.77	969,346.67	
Stuttgart.....	1,373,411.91	1,488,704.55	115,292.64	
Strasburg-Kehl.....	1,986,158.70	1,903,740.65		82,418.05
Total.....	37,162,389.54	43,133,636.59	*6,284,058.02	312,810.97

* Net increase, \$5,971,247.05.

It will be seen that, with two exceptions, each consular district shows an important increase during the year just ended over the exports of 1889, and even surpasses the shipments of 1887, when the totals reached the sum of \$42,785,689.42. These exceptions are at Dusseldorf and Kehl, respectively, where the decrease is due to a falling off in the exports of steel, caused by the fact that since the miners' strikes in 1888 the high price of coal in western Germany has raised the cost of steel manufacture to a point at which the German manufacturers find it difficult to hold their footing in the American market. The fluctuations in American imports from this country and their steady, nearly uniform growth during the period while American pork products have been denied admission to Germany will be apparent from the following table of exports from the Frankfort supervision during each of the past 10 years:

Year.	Value.	Year.	Value.
1881.....	\$26,281,704.80	1886.....	\$36,635,517.23
1882.....	32,082,382.35	1887.....	42,785,689.42
1883.....	28,887,249.89	1888.....	38,764,751.25
1884.....	30,471,829.26	1889.....	37,162,389.54
1885.....	27,298,808.74	1890.....	43,133,636.59

The exports of the last 12 months exceeded, therefore, those of any preceding year, and show an increase during 10 years of \$16,851.79, or more than 64 per cent.

The increase of 1890 over the preceding year occurred largely during the second and third quarters, when, in anticipation of increased duties under the then pending tariff legislation, enormous shipments of many kinds of goods were made at the risk of overloading and breaking down the American market.

But the most interesting exhibit which can be derived from the statistics of the past year is a comparison of the declared exports from Frankfort and its subordinate consulates during the fourth, or December, quarter of 1889 under the old tariff of 1883 with those of the corresponding quarter of 1890 under the new tariff of October 1. From the fact that the shipments of the December quarter in 1889 had been exceptionally heavy and had been followed by the large speculative exports which preceded the adoption and enforcement of the new schedule, it was to be expected that the first quarter after the latter went into effect would show a marked and uniform decrease throughout the whole of Germany. The following, however, is the actual result:

Consulate.	Fourth quarter of 1889.	Fourth quarter of 1890.	Increase.	Decrease.
Frankfort.....	\$915,253.91	\$942,219.77	\$26,965.86	.....
Aix la Chapelle.....	548,937.75	507,556.06	.....	\$41,381.69
Barmen.....	1,650,305.76	1,575,445.88	.....	74,859.88
Crefeld.....	1,257,676.84	1,218,796.54	.....	38,880.30
Cologne.....	620,462.90	472,189.99	.....	148,272.91
Dusseldorf.....	381,594.70	368,702.39	.....	12,892.31
Mayence.....	552,654.12	718,097.67	165,443.55	.....
Mannheim.....	745,328.24	866,269.63	120,941.39	.....
Munich.....	348,014.96	349,696.04	1,681.08	.....
Nuremberg-Fürth.....	1,464,875.37	1,308,795.09	.....	156,080.28
Sonneberg.....	546,596.80	728,667.93	182,071.13	.....
Stuttgart.....	345,838.30	346,509.56	671.26	.....
Strasburg-Kehl.....	548,937.75	556,985.00	8,047.25	.....
Total.....	9,926,477.40	9,959,932.15	*505,822.12	472,367.37

* Net increase, \$33,454.75.

So that, notwithstanding the slight falling off at certain consulates, like Crefeld and Barmen, where woollens and certain other classes of manufactures have encountered increased duties under the new United States tariff, the net result for the whole territory under the supervision of this consulate-general is an actual increase of more than \$33,000 over the already heavy commerce of the same quarter in 1889.

Elsewhere in Europe the same result has been realized even in a more marked degree. Even in Austria, where widespread ruin was foretold as the result of American tariff legislation, the returns for the quarter just past show a net increase of \$1,684,898.97 over the exports to the United States during the corresponding quarter of 1889.

Berlin shows an increase for the same period of \$204,180.76; Lyons, \$452,418.21; Basle, \$393,711.70; and so on, the decrease in one consular district—whenever such decrease occurs—being thus far uniformly more than overbalanced by the increased exports from an adjoining one.

Table showing the value of declared exports to the United States from the district of the United States consulate-general at Frankfort during the year ended December 31, 1890.

Articles.	Aix la Chapelle.	Barmen.	Cologne.	Crefeld.	Dusseldorf.
Braids, bindings, trimmings, etc.		\$1,488,240.97			\$15,098.71
Book, stationery, photographs, and paper ware.....	\$103,714.12		\$16,770.40	\$76,578.81	134.00
Buttons, button stuffs, etc.....	6,757.74	164,793.26			21,358.81
Caps and cartridges.....					18,306.22
China, glass, porcelain, stone, and earthen ware.....			89,258.29		87,549.08
Cloth.....	1,177,791.52				4,953.91
Cologne water.....			16,799.35		
Dyes, drugs, chemicals, etc.....	38,742.41	698,448.07	409,470.85	23,472.16	147,404.31
Fancy goods and toys.....		192,704.57	14,835.62		
Glass plate, window and mirror glass.....	107,196.81				
Gloves.....	175,507.50				
Hatbands and ribbons.....		1,145,356.41		394,978.81	
Ironware, steel, cutlery, etc.....	95,294.24	1,583,557.41	929,086.81		666,888.82
Leather, hides, and skins.....			162,387.26		
Linen, woolen, and cotton goods..	8,852.83	1,212,118.17	5,187.76	14,562.28	224,124.90
Machinery.....	555.80	16,949.22	4,041.94	2,815.80	18,217.86
Mineral water.....	3,796.91		413,927.28		5,550.15
Oil and glass paintings and chromos.....	71,135.40			5,640.82	12,692.03
Prunes, dried fruits, nuts, land produce, etc.....		77,322.59	60,487.51		67.96
Pins and needles.....	82,033.54				
Silk, silk goods, velvets, ribbons, braids, etc.....		807,843.84	351,008.87	5,458,625.88	132,808.71
Smokers' articles, snuff, cigars, and tobacco.....			26,775.68		
Soaps and perfumery.....			12,661.55		
Sundries.....	1,821.84	132,436.97	85,677.84	80.44	25,961.21
Steel (manufactured) and Bessemer.....	117,714.01				
Wine, brandy, beer, and liquor...	2,493.41		243,354.03	34,129.02	1,867.51
Total.....	1,093,408.08	7,519,771.48	2,841,621.04	6,010,884.02	1,382,984.20
Total for preceding year...	1,884,571.72	5,575,146.05	2,358,093.87	5,436,838.36	1,613,377.12
Increase.....	108,836.36	1,944,625.43	483,527.17	574,045.66	
Decrease.....					230,392.92

Articles.	Fürth.	Frankfort.	Kehl.	Mannheim.	Mayence.
Braids, bindings, trimmings, etc.		\$965.10			
Baskets and basket ware.....		872.40			
Brushes and hair pencils.....	\$4,482.49	557.02			
Bronze powder and leaf metal...	155,725.36				
Books, stationery, photographs, and paper ware.....	33,295.79	194,280.98	\$109,310.30	\$11,768.31	\$434.69
Buttons, button stuffs, etc.....		13,256.97	37,433.90		
Clay.....		59,882.92			
China, glass, porcelain, stone, and earthen ware.....		37,718.45	75,445.25	21,272.81	
Cloth.....	451.92	13,299.29			
Downs and feathers.....		45,869.43			
Dyes, drugs, chemicals, etc.....		1,410,738.55	73,111.40	1,905,164.03	664,912.03
Fancy goods and toys.....	85,855.92	103,686.94		2,845.02	
Glass plate, window and mirror glass.....	896,198.15	3,091.62			

Table showing the value of declared exports to the United States, etc.—Continued.

Articles.	Fürth.	Frankfort.	Kehl.	Mannheim.	Mayence.
Gloves				\$17,794.58	
Hatter's fur.....		\$304,965.38			
Hair, prepared and raw.....		138,849.03	\$115,321.85		
Hares' hair.....		292,448.55			
Hops.....	\$34,735.88	106,633.12	8,753.05	8,414.94	\$301,750.93
Instruments.....	9,062.62	5,355.36	3,102.85		
Ironware, steel, cutlery, etc.....	553.10	10,012.17	160,052.95	7,837.36	10,800.09
Jewelry and precious stones.....		483.43		16,541.95	350,279.71
Leather, hides, and skins.....		325,799.13	313,396.40	745,821.82	111,117.13
Leather goods.....		44,865.26			
Linen, woolen, and cotton goods.....		30,081.73	686,027.50	6,999.80	402.81
Lithographic stones and materials.....	5,718.19				
Machinery.....	1,190.00	38,148.28	19,992.80		
Mineral water.....		69,264.97			
Music, musical strings and instruments.....		4,454.74	10,025.50	1,861.75	4,952.12
Optical goods.....		23,180.51			
Oil and glass paintings and chromos.....		4,646.36			6,648.75
Platina wire and platinum.....		299,245.89			
Prunes, dried fruits, nuts, land produce, etc.....	9,005.85	71,308.14	28,891.45	58,732.68	30,519.42
Seeds, plants, etc.....		48,757.12			
Silk, silk goods, velvets, ribbons, braids, etc.....		1,839.70	216,121.10	104.89	
Smokers' articles, snuff, cigars, and tobacco.....		15,504.11	6,515.20	5,670.32	
Soaps and perfumery.....		12,352.52			
Statuary and sculpture.....		97.84			
Sundries.....	7,776.88	56,067.72	18,259.55	98,151.37	18,896.91
Steel (manufactured) and Bessemer.....		1,777.02			
Wine, brandy, beer, and liquor.....	813.50	136,195.82	6,785.90	212,016.08	806,037.85
Watches, clocks, and watchmen's detectors.....		38,016.31	15,193.70	300.42	
Total.....	1,244,865.65	3,864,569.88	1,903,740.63	3,121,298.13	2,306,752.44
Total for preceding year.....		3,351,424.61	1,986,158.70	2,467,337.78	1,848,648.88
Increase.....	1,244,865.65	513,145.27		653,960.35	458,111.56
Decrease.....			82,418.05		

Articles.	Munich.	Nuremberg.	Sonneberg.	Stuttgart.	Total.
Braids, bindings, trimmings, etc.....					\$1,504,304.78
Baskets and basket ware.....		\$45,139.42	\$244,059.65		290,071.47
Brushes and hair pencils.....		38,198.95			43,238.46
Bronze powder and leaf metal.....	\$10,689.10	661,106.76			827,521.22
Books, stationery, photographs, and paper ware.....	93,059.85	108,316.90	50,600.16	\$51,529.66	921,793.97
Buttons, button stuffs, etc.....					243,600.68
Caps and cartridges.....					18,306.22
Clay.....					59,882.92
China, glass, porcelain, stone, and earthen ware.....	31,727.24	14,910.78	1,122,338.33		1,480,220.23
Corsets.....				217,127.01	217,127.01
Cloth.....					1,196,496.64
Cologne water.....					16,799.35
Downs and feathers.....					45,860.43
Decalcomania.....		56,055.92			56,055.92

Table showing the value of declared exports to the United States, etc.—Continued.

Articles.	Munich.	Nuremberg.	Sonneberg.	Stuttgart.	Total.
Dyes, drugs, chemicals, etc.....	\$32,913. 12	\$50,675. 30	\$116,682. 02	\$263,421. 90	\$5,835,156. 15
Fancy goods and toys.....	382,438. 92	1,444,231. 88			2,226,598. 87
Glass plate, window and mirror glass.....		1,366,505. 31			2,372,991. 89
Gas-burners, lava gas tips, brass lamps.....		22,910. 56			22,910. 56
Gloves.....	190,189. 21		70,324. 43		453,815. 72
Hatters' fur.....					204,965. 38
Hatbands and ribbons.....					1,540,335. 22
Hair, prepared and raw.....					254,170. 88
Hares' hair.....					292,448. 55
Hops.....		846,477. 89	185,884. 09		1,492,649. 90
Instruments.....	15,121. 40	53,149. 42		15,830. 21	101,621. 86
Ironware, steel, cutlery, etc.....		46,709. 28	7,866. 74	19,903. 97	3,529,562. 94
Jewelry and precious stones.....				26,807. 89	394,112. 98
Leather, hides, and skins.....		1,344. 11		7,948. 00	1,667,813. 85
Leather goods.....					44,865. 26
Leonic ware.....		82,232. 97			82,232. 97
Linon, woolen, and cotton goods..	58,405. 02	39,495. 71	495,693. 11	350,119. 60	3,132,074. 22
Lithographic stones and materials.....	10,027. 41	87,135. 02			102,880. 62
Machinery.....		1,587. 50			103,499. 21
Mineral water.....			3,821. 22		496,360. 53
Music, musical strings and instruments.....	12,782. 47	50,323. 99	1,514. 94	182,625. 91	268,541. 42
Optical goods.....		6,963. 53			30,144. 04
Oil and glass paintings and chromos.....	236,093. 14				336,856. 50
Platina wire and platinum.....					299,245. 89
Prunes, dried fruits, nuts, land produce, etc.....	342,515. 59	12,718. 18	3,979. 11	201,765. 24	897,313. 72
Pins and needles.....					82,033. 54
Seeds, plants, etc.....	27,904. 25		48,451. 19		125,112. 56
Slates, slate pencils, lead pencils..		160,032. 44	47,600. 33		216,632. 77
Silk, silk goods, velvets, ribbons, braids, etc.....			21,581. 12		6,989,934. 11
Smokers' articles, snuff, cigars, and tobacco.....		1,226. 68			55,691. 99
Soaps and perfumery.....					25,014. 07
Statuary and sculpture.....	47,520. 80				47,618. 64
Sundries.....	76,672. 24	39,476. 78	28,348. 27	149,321. 49	738,839. 51
Steel (manufactured) and Besse-mer.....	14,842. 20				134,333. 23
Wines, brandy, beer, and liquors.	30,453. 06	35,711. 28	39,297. 18	7,634. 30	1,556,788. 94
Watches, clocks, and watch- men's detectors.....				3,669. 37	57,179. 80
Total.....	1,230,919. 10	4,291,843. 60	3,932,273. 77	1,488,704. 55	43,133,636. 59
Total for preceding year.....	1,027,605. 84	5,276,855. 60	2,962,927. 10	1,373,411. 91	37,162,389. 54
Increase.....	203,313. 26		969,346. 67	115,292. 64	5,971,247. 05
Decrease.....		985,012. 00			

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort, January 26, 1891.

MUNICIPAL ADMINISTRATION OF BOMBAY.

REPORT BY CONSUL BALLANTINE.

SEWERAGE.

Owing to the conflict of opinions on sewerage and drainage questions in Bombay, it was deemed essential that some eminent authority should be consulted, and Mr. Baldwin Latham was engaged to aid the municipality with his advice. This gentleman, after an exhaustive inquiry, made a report on the sanitary requirements of the town.

REVENUE.

The total revenue of the year was \$2,136,868, exceeding the estimated revenue by \$168,788, and the total expenditure was \$2,016,962.

The following table shows the revenue for the year 1889-'90:

Items.	Amount.	Items.	Amount.
General tax.....	\$664,678	Town duties.....	\$266,826
Water tax and miscellaneous waterworks revenue.....	449,203	Liquor licenses and tobacco duty.....	133,869
Halalkhor tax, including receipts for special service.....	189,568	Market receipts.....	120,850
Wheel tax and toll fees.....	130,246	Returns from property and miscellaneous..	181,628
		Total.....	2,136,868

The following table shows the loan works expenditures for 1889-'90:

Items.	Amount.	Items.	Amount.
Tansa.....	\$1,377,438	Roads.....	\$18,408
Other waterworks.....	68,151	Minor sanitary and other works.....	84,254
Sewerage works.....	124,820	Total.....	1,758,931
Markets.....	85,860		

The following table shows the charges debitable to current revenue, exclusive of advances and other adjustment items for 1889-'90:

Items.	Amount.	Items.	Amount.
General superintendence.....	\$70,853	Pensions, gratuities and compassionate allowances.....	\$11,656
Assessment and collection department.....	77,057	Education.....	24,143
Public health department.....	478,630	Hospitals and dispensaries.....	14,099
Public works:		Police.....	103,315
Ordinary.....	521,412	Miscellaneous.....	39,491
New.....	18,399	Total.....	2,016,962
Public gardens.....	26,061		
Fire brigade.....	37,562		
Municipal debt.....	594,284		

WATERWORKS.

Satisfactory progress was made in the several divisions of the Tansa project. The outturn of masonry work was 3,103,689 cubic feet. At the end of the

year 13,070 feet of tunneling had been executed. The total value of the work done up to the close of the year was 32½ lacs rupees,* the value of the work executed during the year being 16½ lacs rupees. The quantity of water stored in the Vchar lake on the 31st of October, 1889, was less by 470,000,000 gallons than the amount stored there on the corresponding date of the previous year, and, to avert the contingency of a failure of the municipal water supply, the Pawai valley scheme was at once adopted.

ROADS.

Four steam rollers were purchased, and additions were made to the stock of water tanks and watering carts; 110,000 square feet of foot-paths were paved with bluestone.

LIGHTING.

A fresh contract was entered into with the Bombay Gas Company for a term of 3 years, under which the illuminating power will be increased from 12 to 14 candles.

FIRE BRIGADE AND FIRES.

The control of the fire brigade was transferred to the municipality, by whom it was reorganized and its staff increased. There were eighty-eight fires during the year 1889-'90, against eighty-six in the year before, while the approximate amount of damage done by them rose from 7½ to 22½ lacs rupees. A fire that occurred in Apollo street on November 11, 1889, caused damage to houses and goods to the extent of 16½ lacs rupees.

BIRTHS AND DEATHS.

There were registered 600,489 births in 1889. The rate per 1,000 of population was 36.49. The proportion of male to female children born was 108.85 to 100. Out of every 100 children born there were 52.12 males and 47.88 females.

The total number of deaths recorded in 1889 was 518,562. The ratio per 1,000 was 31.51. The death rate of males per 1,000 of male population was 31.89 and of females per 1,000 of female population 31.11.

PUBLIC GARDENS.

Nine gardens were maintained by the municipality in the town and island of Bombay during the year under review. Their names and the actual expenditure on each are shown below.

Gardens.	Cost of maintenance.	Gardens.	Cost of maintenance.
Victoria Gardens.....	\$20,091	Garden on the Flats.....	\$413
Elphinstone Circle Garden.....	1,317	Dick's Tank Garden.....	83
Falkland Road Garden.....	238	Malabar Hill Garden.....	261
Northbrook Garden.....	596	Total.....	23,478
Sir Kavasji J. Garden.....	167		
Bazar Gate Garden.....	312		

*1 lac rupee = 100,000 rupees; 1 rupee = 40.4 cents.

All were largely frequented by the people. By a new arrangement that was introduced the public were admitted to the Victoria Gardens free of cost on the principal holidays and on 3 days of the week, and were charged a small additional fee on other days. Improved accommodation was provided for a portion of the zoölogical collection, and alterations for the better were made in the arrangement of the gardens themselves.

H. BALLANTINE,
Consul.

UNITED STATES CONSULATE,

Bombay, January 23, 1891.

RAILWAY TRAFFIC AND LABOR IN ENGLAND.

REPORT BY CONSUL WIGFALL, OF LEEDS.

The appended figures as to English railway traffic for the first half of the year 1890 may be of interest :

THE HALF YEAR'S RAILWAY RECEIPTS.

From the following table, in which are presented the totals of the traffic returns published in the Yorkshire Post throughout the past 26 weeks, it will be seen that in the aggregate the half year's receipts of the fourteen principal English railways show an increase of £1,139,799 over the corresponding period of 1889, comparing with the increase of £1,325,895 which 1889 exhibited over 1888 :

Railways.	Goods, etc.	Passengers.	Increase.	
			Goods.	Passengers.
Great Eastern.....	£829,104	£916,493	£28,286	£63,492
Great Northern.....	1,204,590	785,002	28,155	20,275
Great Western.....	2,234,450	1,798,700	28,240	77,810
Lancashire and Yorkshire.....	1,251,627	817,902	4,888	48,604
London and Northwestern.....	3,222,414	2,147,594	69,638	105,700
London, Brighton, and South Coast.....	289,457	802,151	8,575	42,635
London and Southwestern.....	482,282	1,024,307	8,528	51,973
London, Chatham, and Dover.....	138,455	490,342	4,133	10,591
Metropolitan.....		342,385		5,759
Metropolitan District.....		195,312		10,009
Midland.....	2,836,929	1,195,900	134,806	56,367
Northeastern.....	2,471,434	929,892	188,324	71,424
Southeastern.....	273,245	713,967	3,041	35,340
	15,233,987	12,159,947	506,614	599,979
	27,393,934		1,106,593	
Manchester, Sheffield, and Lincolnshire.....	1,080,217		33,206	
Total.....	28,474,151		1,139,799	

The aggregate gain of this year works out to just over 4 per cent., and it is to be noticed that this time passenger traffic contributes the greater part of the increase, reversing the record of 1889, when the increase over 1888 was 5½ per cent. and the increment in goods receipts exceeded that of the other department by £180,000.

Usually in approximating dividends the first thing to be considered is the amount of new capital to be provided for; but on the present occasion the chief element of uncertainty to be

reckoned with is the abnormal rate of working expenses, due to the increased cost of both labor and stores, and particularly, of course, of fuel. In several cases, however, some little provision has been made towards this in the larger amount of undivided profit carried over from the last distribution, though not all of the fourteen companies are in this position, as will be seen from the actual figures as well as the comparison given below, the balances brought into the current 6 months' account from the December half year being as follows:

Railways.	Amount.	Railways.	Amount.
Great Eastern.....	£61,305	London, Chatham, and Dover.....	£62,786
Great Northern.....	8,321	Manchester, Sheffield, and Lincolnshire....	2,519
Great Western.....	59,055	Metropolitan.....	14,012
Lancashire and Yorkshire.....	26,318	Metropolitan District.....	6,132
London and Northwestern.....	111,048	Midland.....	69,705
London, Brighton, and South Coast.....	8,177	Northeastern.....	41,007
London and Southwestern.....	21,903	Southeastern.....	15,028

These balance differences, favorable and adverse as compared with 1889, are shown in the table subjoined, along with the combined traffic increases, the amount of additional profit required to yield an increased dividend of one-fourth of 1 per cent. for the half year (that is to say, after the rate of one-half of 1 per cent. per annum), and the dividends declared for the corresponding half of 1889:

Railways.	Increase in receipts.	Increase or decrease in balance.	Required to pay one-fourth of 1 per cent. dividend for half year.	Dividend, 1889.
				<i>Per cent.</i>
Great Eastern.....	£91,778	+ £20,794	£31,936	1.5
Great Northern.....	48,430	— 491	*33,908	3.5
Great Western.....	106,050	+ 9,007	50,774	5.5
Lancashire and Yorkshire.....	53,492	+ 5,096	41,878	4.25
London and Northwestern.....	175,338	+ 13,900	94,120	6.75
London, Brighton, and South Coast.....	51,210	— 2,899	*18,750	4.25
London and Southwestern.....	60,501	+ 11,810	29,058	4.5
London, Chatham, and Dover.....	14,724	+ 35,809	†15,824	†3.25
Manchester, Sheffield, and Lincolnshire.....	33,206	+ 335	13,730	1.25
Metropolitan.....	5,759	— 7,798	13,204	3
Metropolitan District.....	10,009	+ 1,525	‡3,750	.....
Midland.....	191,173	+ 17,204	75,538	5.25
Northeastern.....	259,748	+ 7,663	60,176	6.25
Southeastern.....	38,381	+ 4,458	*23,608	3

* Including preferred and deferred stock.

† Arbitration first preference stock.

‡ Preference stock.

It is not possible to approximate with any degree of exactitude the effect of the increased expenditure on wages, stores, and fuel, which was only partially felt in the latter part of 1889; but in the June half coal and coke absorbed about £950,000, and 30 per cent. on this would mean an additional £285,000, to say nothing of increased train mileage. Nor are any satisfactory data as to the general effect to be gathered from the monthly net revenue returns published by some of the companies. Thus the Manchester, Sheffield, and Lincolnshire Company's statement to June 15, exclusive of joint lines, shows an increase in receipts of £15,588 (one-eighth of 1 per cent.) and in expenses of £38,373 (seven-eighths of 1 per cent.), the loss on balance being £22,785. Somewhat better than this is the statement of the Southeastern, which, brought down to May 17, reports increased receipts equal to 3 per cent. and an increase in expenses of 4.6 per cent., the gain to net revenue during the 19 weeks

being £3,495. The London, Brighton, and South Coast return to the end of May (including this year's Whitsuntide traffic, but not last year's) is still better, showing a gain in gross receipts of £54,982 (7.1 per cent.) and £30,894 in expenses (6.5 per cent.), or an increase in net profit, of £24,088, whilst the interest on priority stocks calls for no more than an additional £560. But, in using the figures of the southern lines as a possible test for others, it has to be recollected that an increase derived from passenger traffic does not involve the same increase in train mileage as in the case of goods and minerals.

Making necessary allowance for increased capital as well as expenses, but putting out of the reckoning any payment from the Southeastern to the London, Chatham, and Dover under the Shorncliffe decision (which would go to benefit the second preference), it is probable that the net results of the half year's working will be found sufficient for dividends as below :

Railways.	1890.	1889.
	<i>Per c't.</i>	<i>Per c't.</i>
Great Eastern.....	1.75	1.5
Great Northern.....	3.25	3.5
Great Western.....	5.5	5.5
Lancashire and Yorkshire.....	5.5	5.5
London and Northwestern.....	7	6.75
London, Brighton, and South Coast.....	4.5	4.25
London and Southwestern.....	4.75	4.5
London, Chatham, and Dover (preferred).....	4.5	3.75
Manchester, Sheffield, and Lincolnshire.....	0.75	1.25
Metropolitan.....	2.75	3
Midland.....	5.5	5.25
Northeastern.....	6.75	6.25
Southeastern.....	3	3

LABOR RETURNS.

In the same connection may be added a conspectus of returns from twenty trades unions for the month of June, 1890, representing an aggregate membership of 218,739, as below :

STATE OF THE SKILLED LABOR MARKET.

[From the Yorkshire Post.]

The following memorandum has been prepared for the Board of Trade Journal by the labor correspondent to the board of trade :

"Twenty trades unions representing skilled trades have this month sent in returns as to the state of their respective labor markets. These show a slight diminution in the number of unemployed members, and, but for disputes in some of the industries concerned, this reduction would have been greater than it is. Generally speaking, however, the labor market is a little more settled than it was a month ago, and strikes are not quite so prevalent as they have been during the past few months. Thus, while during the month of May 106 strikes were recorded and in the month of April 91, but 79 were entered for the month of June. For 13 of these the cotton trade is responsible; there were 9 in the woolen trade, 8 in coal-mining, 7 among dock laborers, 6 in the building trades, 5 in iron and steel foundries, 5 in engineering trades, 6 in the boot and shoe trades, 3 in shipbuilding, and the remainder are divided among the miscellaneous industries. Nor can it be said that any of these are of serious importance.

"There is thus reason to hope that we are likely for a time to enjoy a somewhat more peaceable state of relations between employers and employed than has recently prevailed.

"The general returns as to the numbers of unemployed show that, on the whole, trade remains good. In no single trade is there any considerable increase in the number of those

on benefit, while, on the other hand, a large majority show some diminution. The twenty societies reporting have an aggregate membership of 218,739, and of these 4,118 were out of work, a percentage of 1.88. For these same societies last month the total of those out of work was 4,236, a proportion of 1.96 per cent. Practically, therefore, the position remains unchanged, the improvement being of the slightest possible description.

"All the branches of the engineering trade remain busy and show rather better returns than they did a month ago, the iron-founders showing the greatest improvement, their percentage of unemployed having fallen from 2.8 to 2.3. Shipbuilding does not seem quite so brisk as it has been, and there is a slight increase in the number of those out of employment. The building trades exhibit no change, but remain very good, and show a low percentage of members on the unemployed benefits. The strikes in the cabinet-making trade have now terminated, and not one in a hundred of those engaged in that industry are now unable to find employment. The textile trades are but moderately employed, though for this season of the year the cotton trade is better than it has been for some years back. The coal trade continues busy, and the iron trade is fairly good, while the steel trade is very well employed, the percentage of steel-smelters out of work being only 5. The clothing trades, including boot and shoe making, are not quite so well employed as they were, but it is expected that the lull is but temporary. The printing trade, though not particularly busy, is quite up to the average for the season."

A summary of these statements would seem to show a generally satisfactory product for the 6 months' operations considered as a whole. Whether the continuing result will prove of an equally gratifying character remains for the coming months to develop.

F. H. WIGFALL,
Consul.

UNITED STATES CONSULATE,
Leeds, July 30, 1890.

EMIGRATION FROM HAVRE IN 1890.

REPORT BY CONSUL WILLIAMS.

I have the honor to report the following as official and this day received by me:

During the year 1890 the passengers carried from Havre to New York by the Compagnie Générale Transatlantique were as follows: First class, 6,146; second class, 2,195; third class, 24,827; total, 33,168. The number carried by this company during 1890 was only 60 less than were carried during the year of the Paris Exposition (1889), 33,228.

I inclose a clipping and translation, from which it will be observed that, comparing the steamer passenger business from this port for the year 1890 with that of 1889, we find shown an increase in total number of ships of 8.87 per cent., in those destined to New York of 11.11 per cent., in total emigration from Havre of 21.76 per cent., in that direct from Havre of 4.87 per cent., and in that from Hamburg via Havre of 76.27 per cent.

OSCAR F. WILLIAMS,
Consul.

UNITED STATES CONSULATE,
Havre, January 30, 1891.

No. 127—2.

EMIGRATION FROM HAVRE.

[Inclosure in Consul Williams's report.—Translation from *Le Petit Républicain du Havre*, January 24, 1891.]

The number of emigrants embarking directly from Havre during the year 1890 was 39,922, against 38,065 in 1889, which shows for the year 1890 an increase of 1,857. These 39,922 emigrants are classified in the following manner: French, 9,076; and foreign, 30,846.

With respect to nationality, the following presents some information more in detail:

Nationality.	Number.	Nationality.	Number.
French.....	9,076	Spanish.....	99
Alsatian and Lorrainian.....	3,036	Russian.....	384
German.....	1,942	Turkish.....	1,817
Swiss.....	7,424	Grecian.....	494
American.....	754	Scattering.....	97
Italian.....	12,854	Total.....	39,922
Austrian.....	1,317	Total for 1889.....	38,065
English.....	105	Increase.....	1,857
Belgian.....	503		

Following the above, the destination of these 39,922 emigrants was as follows:

Destination.	Number.	Destination.	Number.
West Indies.....	106	Colombia.....	17
Brazil.....	353	Uruguay.....	260
Canada.....	607	Total.....	39,922
Argentine Republic.....	8,922		
United States.....	29,657		

If there be added to this number the 20,785 emigrants who came from Hamburg, and who only made a call in our port, the total number of emigrants leaving Havre in 1890 is raised to 60,707. These 60,707 emigrants have been transported by 184 ships, of which 115 were French, 59 German, and 10 English. These steamers left for destinations as follows:

Destination.	Number.	Destination.	Number.
West Indies.....	8	Colon (Aspinwall).....	3
Brazil.....	30	New York.....	100
Buenos Ayres.....	33	Total.....	184
Canada (via England).....	10		

AUSTRALIAN WOOL, 1890.

REPORT BY CONSUL-GENERAL WALLACE, OF MELBOURNE.

The local market for Australian wool in November, 1889, closed at an advance of about $2\frac{1}{2}d.$ to $3d.$ per pound on greasy, and $4d.$ to $4\frac{1}{2}d.$ on scoured, descriptions as compared with the close of 1888. This was, however, partially lost at the December sales, yet the year closed with an advance of $1\frac{1}{2}d.$ to $2d.$ for greasy and about $3d.$ to $3\frac{1}{2}d.$ on scoured as compared with the commencement.

The sales for 1890 opened January 7, showing an advance of half a penny per pound over December, 1888; but prices were not very firm, and by the 22d the advices from Antwerp were distinct notes of warning of the coming

collapse of prices, and from that date to the end of the season the local markets showed active, obedient sympathy with the European markets.

The exports of wool from Australasia for the season 1888-'89, as compared with the previous 12 months, were as follows:

Colony.	1889-'90.	1888-'89.	Increase.	Decrease.
	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
Victoria.....	425,928	352,982	72,946	
New South Wales.....	472,734	453,601	19,133	
South Australia.....	148,417	133,139	15,278	
West Australia.....	23,999	21,881	2,118	
New Zealand.....	279,950	267,289	12,661	
Queensland.....	104,309	106,222		1,913
Tasmania.....	19,251	19,536		285
Total.....	1,474,588	1,354,650	122,136	

This shows a net increase of 119,938 bales; but this does not, however, represent the actual increase in production of the 1889 clip, as there remained June 30, 1889, 20,000 bales unshipped of the 1888 clip. The net increase was, therefore, about 80,000 bales, or 6 per cent.; and, in view of the fact of an increase of 4,686,444, or 5 per cent., in the number of sheep and that it was believed the clip was the heaviest ever known, this increase in production is not excessive.

The Victorian wool sales for the season 1890-'91, instead of commencing the first week of October, as had been customary for a number of years, did not open until the 15th of that month and were adjourned after the sale on the 22d of December until after the holidays. To date the sales, as compared with the same portion of the previous wool season, are as follows:

Names of selling brokers.	1890.	1889.	Increase.	Decrease.
	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
Goldsborough, Mort & Co.....	38,706	53,610		14,904
New Zealand Loan and M. A. Company.....	36,810	50,352		13,542
A. M. and Agency Company.....	22,326	28,595		6,269
Dalgety & Coy.....	20,449	24,341		3,892
Union M. and Agency Company.....	8,694	8,982		288
Younghusband & Co.....	4,077	3,386	691	
D. Lascelles & Co.....	30,096	31,897		1,801
George Hague & Co.....	9,206	9,798		592
Strachan B. & Co.....	2,768	1,622	1,146	
Others.....	*400	1,636		*1,236
Total.....	173,532	214,219		40,687

* Estimated.

These figures show a large decrease in the sales. This decrease is attributed to several causes: first, to the lateness of the season in consequence of the shearing difficulties in connection with the maritime strike; secondly, to the lightness of the Victorian and Riverina clip, which is not expected to be so large as last season; and, thirdly, the low prices paid locally, although

fully equal to those ruling in London—freight and charges being taken into consideration—have determined a number of wool-growers to risk that market. As far as the decrease is due to the lateness of the season, it is likely to be made up by the increased volume anticipated in January and February.

The opening prices were at least 15 per cent. below those of the previous season and on about the same level as those in 1888. The news of the financial panic in London in November depressed prices to fully 20 per cent. below the opening rates of 1889, but there was some recovery in December, and present Melbourne quotations for ordinary merino wool are about 15 per cent. below the close of 1889.

From information obtained by the *Argus* (newspaper), of Melbourne, the following comparison of values is made, which would indicate that the condition of the clip was not so satisfactory as in the previous year :

Period.	Number of bales sold.	Value.	Average value per bale.
		£ s. d.	£ s. d.
October 2 to December 20, 1889.....	214, 219	3, 239, 194 0 7	15 2 5
October 15 to December 22, 1890.....	173, 532	1, 993, 866 8 1	11 9 9

The falling off in the value of wool sold is large; the average per bale is £3 12s. 8d., or 24 per cent. These facts would appear to indicate that the average fall on all descriptions of wool has been about one-fourth; but this is not true, as very "light fine" in good condition is scarce, and commands more than average top prices. The clip as a whole is much inferior to that of 1889, which was a very good one.

The following is taken from the Melbourne *Argus* of January 3, 1891 :

The condition of that portion of the Australian clip which has passed through the Melbourne warehouses has been quite as unsatisfactory as the prices realized for it. The clip of 1889 was one of the best ever shorn, but that of 1890 has been in striking contrast to it. As regards that portion of the clip from western and central Riverina and northern Victoria, it bids fair to be remembered as one of the burriest and seediest clips for many years. This is probably due to the fact that the abnormally abundant season experienced during the winter and spring of 1889 produced an unusual growth of trefoil burr and other kinds of seeds, most of which, however, did not ripen until after the 1889 shearing. In this way the 1890 clip has become infested with it. As a general rule, a burry clip has the compensating advantage of being sound and well grown and free from earth and dust, the same cause, namely, an abundant season, producing both the burr and the sound growth of wool. This season, however, unfortunately, the rule does not apply, for the very burry clips referred to are usually more shabby in appearance, more earthy, and lacking in substance. This is explained by the fact that many districts have suffered severely by the ravages of locusts while the present clip was growing, and that the rains, though fairly abundant, were not well timed. Of wools from eastern Riverina only a few are up to last season's standard, many being tender in staple and lacking in brightness. Those of the western district of Victoria, too, are not equal to those of last season, being frequently more tender in staple and lacking in robustness. Upper Lachlan wools compare very favorably with last year's clip, being well grown and light in condition, though somewhat lacking in fineness. These wools had formerly a reputation for exceptional fineness of quality, and were much prized for making superior worst yarns. They have, however, in many instances now lost this special quality, owing, no doubt, to a desire on the part

of the owners to produce heavier fleeces, and thus obtain larger returns per head. Wools from the lower Darling, though better grown, are heavy in the grease. Those from the middle and upper Darling, however, are frequently mushy, seedy, and earthy. Northern Adelaide wools are inferior in staple, more burry and seedy, but generally in lighter condition. That portion of the New South Wales clip which is usually marketed in Sydney is, as a whole, distinctly inferior in growth and is infested with burrs and seeds of various kinds. It is, however, estimated to contain less grease and to be finer haired than that of last year. Speaking generally, the Australian clip of 1890 is expected to give a better yield to the manufacturer than its predecessor, though, unfortunately for the growers, the yield per head is undoubtedly considerably less than that of last year. When we wrote 12 months ago, we were able to congratulate the trade upon the great improvement in the growth and character of small clips of wool from farmers who keep from 100 to 1,000 sheep, which now form no inconsiderable portion of the total wool produce of Victoria and Riverina. We regret to say, however, that any hopes formed last year of a permanent improvement in this class of produce have not been sustained this season.

The following is added as a very fair estimate of the production for the year 1890. The distribution of the clip compares as follows with that of the two previous seasons:

Destination.	1889-'90.	1888-'89.	1887-'88.
	<i>Bales.</i>	<i>Bales.</i>	<i>Bales.</i>
London.....	1,225,259	1,182,001	1,162,478
Continent :			
Direct.....	205,666	88,131	42,900
Via London.....	32,322	46,277	45,342
America :			
Direct.....	4,320	30,767	18,847
Via London.....	7,021	7,474	3,922
Total.....	1,474,588	1,354,650	1,273,489

The above figures relating to the distribution of the clip are chiefly remarkable for the very large increase, namely, 117,535 bales, in the direct shipments to the continent of Europe. The direct shipments to America, on the other hand, were much smaller than usual.

Regarding the probable production of the present (1890) clip, there is considerable difference of opinion among even the best authorities. At first it was assumed rather hastily that there would be a normal increase of, say, 100,000 to 120,000 bales, for no better reason than the fact that during most ordinary seasons this increase has been forthcoming. As, however, the season progressed and a large decrease, amounting to 140,000 bales, in the shipments to date developed itself, opinion swung around (perhaps rather too far) in the opposite direction, and it is now asserted in some quarters that there will be no increase at all, or at all events only an inconsiderable one. This latter opinion is based to some extent upon the decrease in the shipments to date, of which too much notice is probably taken, and also upon the pretty well ascertained fact that the clip per head throughout Victoria and Riverina is decidedly lighter than it was last season. On the other hand, however, it is asserted that the clip per head in eastern and central New

South Wales, to the north of Riverina, is rather heavier per head and that this will largely counterbalance the lightness per head in the south. As a matter of fact, however, it is yet too early to venture upon any definite opinion as to the probable production of the 1890 clip.

GEORGE H. WALLACE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Melbourne, January 8, 1891.

THE TRADE OF RUSSIA.

REPORT BY CONSUL-GENERAL CRAWFORD, OF ST. PETERSBURG.

As considerable discussion is now taking place in the press of this city as to the causes for a decline both in Russian exports and imports for the past year, as shown by a report just published by the administration of the imperial custom-house for the first 11 months of 1890, I have made a brief summary of the trade of Russia from January 1 to December 1, 1890, and based upon the above-mentioned publication.

In the first place, the custom-house receipts for the above-mentioned period of the most important articles of import amounted to 73,556,000 rubles, showing an increase of 1,731,000 rubles as compared with the corresponding period of the preceding year.

As usual, the month of November has been marked by a certain decrease in exports. However, it has already been pointed out in the local papers that the past year was less favorable for the exportations than any preceding years, principally because of the rise in the value of the ruble. In comparing the totals of the exportations during the first 11 months of the last 3 years, we obtain the following figures:

	Rubles.
1890.....	642,073,000
1889.....	697,611,000
1888.....	719,305,000

On the other hand, the imports for the same period were as follows:

	Rubles.
1890.....	351,493,000
1889.....	360,023,000
1888.....	318,572,000

In these figures are not included the exports and imports of the precious metals, gold and silver, which are tabulated separately as below:

Description.	1890.	1889.
	Rubles.	Rubles.
Exported.....	17,821,000	19,617,000
Imported.....	21,492,000	11,582,000

The exports of cereals show a decrease of 28,114,000 rubles in the above-named period. Other important farm products show a striking decrease in this period, and were distributed as follows:

Articles.	Amount.	Articles.	Amount.
	<i>Rubles.</i>		<i>Rubles.</i>
Butter	1,500,000	Hemp.....	4,000,000
Sugar.....	9,000,000	Hides.....	700,000
Forest products.....	1,900,000	Wool.....	9,594,000
Flaxseed.....	2,000,000	Cattle.....	1,400,000
Flax.....	1,400,000		

Of the principal articles of exportation, only the following show an increase:

Articles.	1890.	1889.
	<i>Rubles.</i>	<i>Rubles.</i>
Eggs.....	11,946,000	9,776,000
Naphtha.....	24,729,000	24,222,000

The following table will show a comparative summary of imports and exports for the first 11 months of the year 1889 and 1890:

Articles.	Imports.		Exports.	
	1890.	1889.	1890.	1889.
	<i>Rubles.</i>	<i>Rubles.</i>	<i>Rubles.</i>	<i>Rubles.</i>
Articles of food.....	58,795,000	55,847,000	360,773,000	393,395,000
Material for manufactures.....	222,699,000	227,698,000	250,060,000	265,198,000
Animals.....	932,000	980,000	9,981,000	12,142,000
Manufactured articles.....	69,067,000	75,498,000	21,259,000	26,876,000
Total.....	351,493,000	360,023,000	642,073,000	697,611,000

In closing this summary I wish to call attention to the fact that the tenor of the whole discussion upon the reasons for the great decline in Russian exports goes to show that it is mainly due to the unprecedented rise in the value of the ruble,* the currency of the country.

I may add, furthermore, that, in consequence of the above showing, measures are being recommended which look toward a general desire to reduce the value of the ruble to its former level, and thus improve the general business of the Empire.

J. M. CRAWFORD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
St. Petersburg, February 2, 1891.

*The United States Treasury valuation of the ruble is 54.4 cents.

THE PORCELAIN INDUSTRY AT LIMOGES.

REPORT BY COMMERCIAL AGENT GRIFFIN.

The annual statement of the number of porcelain furnaces fired at Limoges for 1890 has just been published. The figures of the following table present a very interesting story when considered comparatively, as the year that has just closed may be considered the most important for many years in this industry. The climax of the trade was reached in 1882 and 1883. Then the number of furnaces fired was greater than ever before; but rival factories were opened at that date in Austria, Germany, and England, and Limoges suffered very greatly, so that by 1887 the industry had lost one-third of its importance. Since then, with the exception of 1889, there has been a gradual increase, as shown in the table :

Table showing the number of furnaces fired at Limoges from 1883 to 1890, inclusive.

Months.	1883.		1884.		1885.		1886.	
	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.
January.....	115	37	103	33	69	27	80	21
February.....	123	37	143	37	112	17	121	26
March.....	197	47	167	42	154	33	125	29
April.....	195	51	167	41	153	37	129	29
May.....	205	50	172	43	141	30	112	26
June.....	204	49	167	39	145	35	123	25
July.....	201	42	170	39	141	31	139	29
August.....	208	48	162	35	128	28	132	26
September.....	194	39	165	35	122	26	135	29
October.....	222	48	173	38	135	24	143	26
November.....	193	50	152	33	129	21	140	30
December.....	182	46	154	33	131	26	129	27
Total.....	2,239	544	1,895	448	1,560	335	1,528	323

Months.	1887.		1888.		1889.		1890.	
	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.
January.....	89	22	96	26	91	20	98	25
February.....	114	24	117	26	110	24	124	22
March.....	144	29	155	35	141	27	141	27
April.....	143	25	149	31	136	29	156	31
May.....	143	27	154	30	145	25	168	31
June.....	142	27	148	33	132	27	164	31
July.....	145	29	151	30	145	29	177	35
August.....	145	27	158	29	152	32	157	30
September.....	144	25	143	25	144	25	159	35
October.....	139	31	150	30	151	30	186	30
November.....	134	30	146	22	142	28	162	31
December.....	139	28	138	22	140	27	155	31
Total.....	1,621	324	1,705	339	1,629	323	1,847	359

EFFECTS OF THE NEW TARIFF.

It is remarkable, in looking over the exports from this district to the United States, to notice the effects of the new tariff. Although the duty on china was unchanged, there was an extra charge made on the packing. The result has been an increase of about $2\frac{1}{2}$ per cent. in the exports, notwithstanding the packing charges, and in spite of the hue and cry made by the French press "that exportations would be excluded by the new duties."

The months of October, November, December, and January just past show an increase of almost one-third over the corresponding months of last year and almost twice as much as for the same period in any year since 1884.

CLASS OF GOODS.

The porcelain manufactured to-day for exportation to the United States is of a finer and more valuable grade than formerly; few houses attempt the manufacture of cheap goods; the decorations are becoming richer and richer; the shapes are finer and more artistic. The American taste is said to be the finest and most highly cultivated of any to which the manufacturers cater. The average price of goods has increased considerably. This is solely due to the richness of decorations and styles.

LABOR AND COST OF MANUFACTURE.

The price of labor has a downward tendency; there has not been published a single increase of wages. The supply of skilled and unskilled labor is greater than the demand; consequently, there has been a corresponding amount of suffering among the laboring classes.

Machines of different kinds are being introduced all the time to diminish hand labor, and thereby the cost of kneading, molding, enameling, etc., are reduced to a minimum. The price of coal, however, has been higher this year than before, costing at the factory 34.6 francs (\$6.68) per ton. Wood has been somewhat cheaper than in former years. The high price of coal raises the cost of manufacturing, so that there is a tendency to increase the price of china rather than to lower it.

NEW PROCESSES.

The attention of the Department was called, in a report dated Limoges, December 22, 1890, to a "new process of firing porcelain" by Wright's patent burners, which employ the residuum of petroleum. The interest manifested in the experiments is very great. Numerous petitions have been presented to the French Government to reduce the duty on this product to the same figure as that on coal or wood—1.5 francs (29 cents) per ton—in place of the present duty of 120 francs (\$23.16) per ton. If this were done, the cost of manufacturing china in France would be reduced about 20 per cent. The prospects are now considered favorable to the adoption of the low tariff.

Another process that has lately been employed, as yet secretly, but with great success, is the use of electricity in clarifying the kaolin paste. The impurities which discolor and give a yellowish tinge to the ware are eliminated, and a poorer quality of kaolin can be made to produce as fine china as the best clay. The reduction in price is said to be from 5 to 7 francs (96.5 cents to \$1.35) per 100 kilogrammes.

INCREASED FIRING CAPACITY.

Since October 1, 1890, three of the largest manufacturers have increased their furnace capacity from one-fourth to one-half. The new furnaces have a diameter of from 18 to 24 feet, it having been found more economical to fire large furnaces than small ones. These new furnaces will add about one-fourth to the furnace power of Limoges, so the prospects are that for the coming year there will be an increased output of china.

OTHER MARKETS.

The principal market for Limoges china is the United States. Between two-thirds and three-fifths of all that is manufactured is sent thither. The home market is of little account; the cheap German and English china, with the poorer kinds of *faience*, undersell the better porcelain of home factories. Next after the United States and France are England, Russia, South America, and Spain, in the order named.

WALTER T. GRIFFIN,

Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,

Limoges, January 31, 1891.

THE FOUNDLING ASYLUMS OF FRANCE.

REPORT BY CONSUL KNOWLES, OF BORDEAUX.

Facing the busy quay that traverses the western portion of the city of Bordeaux, and overlooking the fertile banks of the Garonne River on the opposite side, is a low, somber, three-storied building of Munich gray granite. The structure possesses neither magnificence nor attraction, and a few tall poplar trees throwing their shadows across the portico scarcely lend charm to the picture. There is nothing particularly noticeable to the passer-by in this conventional pile of stone and mortar, with the exception, perhaps, of a curious-looking, double, reversible armchair, fixed into the wall at the right of the entrance about 4 feet above the ground and turning on a pivot, so that, if one side be directed toward the exterior of the building and facing the observer, the other must necessarily be directed inward.

The building is the foundling asylum of Bordeaux (L'Hospice des Enfants Assistés). The chair is the well-known "tour," or wheel, intended for the reception of abandoned infants and now, of necessity, fallen into disuse.

The asylum was founded in the year 1619 by a benevolent maiden lady named Tanzia. Over the door is inscribed the following words: "Mon père et ma mère m'ont abandonnés, mais le Seigneur a pris soin de moi" ("my father and mother have abandoned me, but the Saviour has taken me into his care").

Within, the stillness is almost audible. The sound of one's footsteps echo and reëcho along the vacant halls and dormitories, until, seeking out quiet nooks in the dark distance, they lie down to repose and whisper "silence." The asylum has two hundred and fifty beds, or cribs, each as neat and as clean as the active white-capped Sisters of Charity who move noiselessly among them.

The wheel, or chair, just described is a well-known institution in France, serving, until a comparatively few years ago, as a general receptacle for out-cast children. An infant had but to be placed by anyone wishing to rid themselves of the little creature upon the chair, a turn given to the same, and immediately, as if by magic, the embarrassing object has disappeared within and another chair awaits the newcomer.

It is rare that so apparently insignificant an object has given rise to such violent discussion as has this chair, or "tour," in France. By some its existence is held as a never-failing incentive to illicit love; by others it is held that its abolishment would promote infanticide.

The immortal author of the famous "Memoir on the Integral Calculus," Jean le Rond d'Alembert, has given expression to the idea that deserted children always have existed and always will exist, that no law or revolution in morals can ever entirely prevent the abandonment of infants, that the evil has been common to all ages, and that we shall probably have to deplore it as long as society is governed by the same vices.

Of all European countries, France has established the greatest number of orphan asylums.

It is merely a vital illustration of the infallibility of cause and effect, of the inexorable laws of supply and demand.

When foundling asylums were first established, that weakness which we characterize as the worst of crimes was then tolerated—in fact, even tolerated by public opinion as part of the social law. Abandonment of offspring was justifiable, infanticide legal.

The revolutionists of 1790—the Dantons, the Marats, the Mirabeaus, the Robespierres, and other self-styled reformers of society and morals—were so eager for new life and blood—I speak figuratively—that, rather than discourage the birth of illegitimate children, a premium was put upon them. The best that may be said in support of these is that it was, beyond all doubt, a most excellent way to repopulate the nation with new Dantons, new Marats, new Mirabeaus, and new Robespierres.

The laws of France relating to the establishment and maintenance of foundling asylums are found in their proper classification under the head of "l'assistance publique," and are the decree of January, 1811, the instruc-

tion of February, 1823, the decree of March, 1852, and the law of May, 1869. These statutes state that "enfants assistés" shall include, in addition to orphans and foundlings proper, whatever infants may be brought by their parents, irrespective of their legitimacy.

The asylums in France are departmental, not communal, institutions. The State pays only the cost of inspection and superintendence. The department in which the asylum is situated is liable for the following expenses: (1) Temporary assistance to unmarried mothers, in order to prevent desertion; (2) allowances to the foster fathers in the country for board, (3) clothing; (4) expenses for physicians, burials, etc.

In 1889 the total cost throughout the Republic of maintaining the asylums was 11,300,171 francs, of which 2,570,171 francs were paid by the asylums themselves and 8,730,900 by the departments. This represented the support of 67,000 children.

During the same year there were 25,000 abandoned children in France. Of these, 585 were taken back by their parents—343 by the mothers, 166 by the fathers, and 76 by relatives. Only 219 were legitimate.

The professions of the women who abandoned their infants are represented as follows: Cooks, housemaids, servants, etc., 1,398; seamstresses, 917; women working by the day, 418.

The "assistance publique" of Paris is specially provided for by the law of 1849. The management consists of a director appointed by the minister of the interior, a number of under directors, visiting physicians, etc. The asylum receives, on an average, 4,200 children per year—one two-hundredth part of the entire birth rate of France. The expense of keeping a single child for 12 years is estimated at 1,500 francs.

It is understood that the children are kept until the age of 12, in order that they may be reclaimed by their parents, should these so desire. The "droit de recherche," that is to say, the right of reclaiming a child, is conceded to the parent upon the payment of a small fee. Should, however, the child remain unclaimed up to the age of 12 years, he is considered an orphan and is apprenticed by the authorities of the asylum to a peasant or artisan.

By the decree of January 19, 1811, 235 "wheels" were established throughout France. On November 1, 1837, the same were by law partially suppressed. In the year 1860 25 remained; in 1870 but 4 were in existence—1 in Paris, the 3 others in Marseilles, Rouen, and Evreux.

When the "wheel" at the asylum of Draguignan was suppressed in 1859, the number of foundlings sank from 103 to 14. When, a year later, the "tour" was suppressed in Antwerp, the number of infants left surreptitiously at the asylum fell off 25 per cent.

Let us now, by way of parenthesis, compare the foregoing figures with some of the rather limited statistics furnished us by the metropolis of the New World. When, in 1869, the Sisters of Charity established a foundling asylum in New York city, they received the first year almost a thousand infants under 3 weeks old. A crib was placed in the vestibule at night, and dishonored mothers found the plan a very convenient one.

To return again to the earlier history of these institutions: one of the saints who holds an exceptionally exalted rank in the French calendar is Vincent de Paul. This man, who had been a slave, came from the south of France early in the seventeenth century and, with the coöperation of five other Lazarists of his cloth, founded a society known as the Congregation of the Order of the Mission, the object of the same being to reclaim the ungodly inhabitants of the province of Châtillon-sur-Chalaronne. Afterward, in 1632, St. Vincent de Paul obtained the papal bull to reorganize the society, with himself at the head, and to establish a permanent mission in the city of Paris. The chief object or end of this society was to offer an asylum to illegitimate children, whose parents found this way of ridding themselves of them more agreeable than infanticide. They kept together for a century and a half, until the leaders of the Revolution thought proper to disperse them. But the Lazarists took new life under the Empire, and to-day are stronger than ever, with fourteen branches in the United States.

To-day, when a mother wishes to leave her child at an asylum, she is interrogated minutely by the clerk. Her name, age, occupation, residence are all recorded. If she desires to claim her child at some future time, a colored ivory necklace is hung about its neck—blue, if a male, and red, if a female. If she wishes to entirely abandon her infant, a string of white beads replaces either of the others. A silver medal, with the figure of St. Vincent de Paul on the front and a number on the reverse side, is attached to each necklace, and both remain upon the child until it attains the age of 12 years.

Perhaps no better illustration of the indifferent way in which children are consigned surreptitiously to foundling asylums in France is afforded than in the case of Jean Jacques Rousseau, the author of "The Social Contract" and "Emile," and whose moral influence on contemporary thought previous to the Revolution was greater than that of all his enemies and friends put together. Here was a man who, when he came a second time to establish himself in Paris, saw nothing ahead but disappointment and felt poverty and hunger tugging at his sleeve. He had little else offered him than some occasional music-copying at a beggarly compensation, and as uncertain as beggarly. But, as he sat and mused in his wretched garret in the Rue de Cordiers, he felt, as the most cynical often do, the necessity of a companion—some one whom he could caress in his loneliness; some one who could sympathize with, as well as love, him and take the place in his heart of the ambition and spirit that had, alas! gone out of it.

Inscrutable as it may seem, this incomparable genius found, like Hazlitt, that which he sought in an ignorant, if modest, kitchenmaid, who could neither retain in her memory the order of the months of the year nor tell the time of day by a clock. Their union was purely an arbitrary one. They sat on a box, ate their miserable suppers from the window sill, thought neither of the hour hands of the clock nor the days of the month, and were supremely happy; that was enough. And so time wore on, until a child was born. Rousseau at once made up his mind what to do with it. He

took it secretly to the asylum for foundlings and left it there, partly because it was the usage of the country, partly because he thought that in doing so he was not only ridding himself of a possible annoyance, but was providing for his child a better home than he himself on his limited income could provide; and, thirdly, in thus acting he was enrolling himself as a citizen of Plato's republic. Three times were children born to him, and as many times did he thus dispose of them. Years afterward, when Rousseau craved the sweetness and delight of his children's embraces, the Maréchale de Luxembourg made efforts to discover the children of the great philosopher; but they had disappeared beyond the remotest hope of recovery, and Rousseau and his sons and daughters lived together in the world not knowing one another.

How many Rousseaus have there been in France? How many are there to-day? It is not difficult to determine; the statistics of every foundling asylum are at your disposal.

The "wheel" is a thing of the past; but that circumstance does not prevent mothers from leaving their babes on the doorstep, ringing the bell, and disappearing unnoticed into the night, confident that the parentage of the child can never be determined. The asylum—provided that none are voluntarily furnished—makes no inquiries regarding the mother; the State forbids inquiry as to the paternity. The Government neither recognizes breach of promise nor infidelity.

Soon the gloomy old asylum on the Quai de Palandate at Bordeaux will be no more. A score of laborers will be at work at its demolition, making way for a more necessary adjunct to liberal education, social economy, and scientific advancement—a railway station. Where once the wailing cries of many a little waif waked the slumber of the silent night; where once a long-drawn respiration, a gasp, and the absence of a mother's care ended a life just begun, the piercing shrieks and groans of steam whistles, the mournful and incessant rolling of iron wheels, the dismal clanking of brakes and couplings will leave but a memory of what has gone before.

But what a memory! If all that imagination has pictured, all that fancy has created, all that delirium has raved or nightmare painted in the brain of man; if all that romance has conceived, visions conjured, or reveries awakened; if all the sighs, the tears, and suffering; if all the grief, distress, and heartache—if these and every other human passion that sways thought and incites action were to unroll themselves before the mind, the volume that contained them all would be but a paragraph, a murmur, to the silent echoes now hastening to destruction within these four somber, grim walls.

The history of the foundling asylum at Bordeaux never has, never will, never can be, written.

HORACE G. KNOWLES,

Consul.

UNITED STATES CONSULATE,

Bordeaux, January 31, 1891.

THE UNITED KINGDOM IN 1889 AND 1890.

REPORT BY CONSUL-GENERAL NEW, OF LONDON.

The total value of imports into the United Kingdom in 1889 was \$2,138,187,975 and exports \$1,573,528,705, or together a total trade of \$3,711,716,680. The imports and exports both exceed those of any previous year and were in the proportion of \$98.12 per head of population of the Kingdom.

These totals do not include the value of gold and silver bullion, of which there were imported \$135,497,195 and exported \$125,608,150, nor the goods imported for transshipment, the value of which was \$50,905,060.

IMPORTS.

The total amount of imports in 1889 was \$2,138,187,975, an increase of \$200,009,260 compared with the previous year. The principal articles of import were: Corn, value, \$255,500,000, a slight decrease; raw cotton, \$228,000,000, an increase of \$28,000,000; silk manufactures, \$59,000,000, an increase of \$6,500,000; sugar, \$112,500,000, an increase of \$22,500,000; wood, \$99,000,000, an increase of \$26,500,000; wool, \$143,000,000, an increase of \$13,000,000; woollen manufactures, \$49,000,000, an increase of \$4,500,000; tea, \$50,000,000, a slight decrease; metals, \$108,500,000, a decrease of \$6,500,000; flax, jute, and hemp, \$60,000,000, an increase of \$12,500,000; provisions (bacon, hams, beef, butter, cheese, etc.), \$157,500,000, an increase of \$21,000,000; and animals, \$45,000,000, an increase of \$15,500,000.

Table showing imports by articles in 1889.

Articles.	Quantity.	Value.
Animals:		
Oxen, bulls, cows, and calves.....	tons.....	555,222 \$45,346,635
Sheep and lambs.....	do.....	677,958 5,975,660
Bacon and hams.....	cwts.....	4,484,108 48,976,460
Beef.....	do.....	1,648,220 16,979,660
Bones, except whalebone.....	tons.....	72,187 1,953,700
Brimstone.....	cwts.....	795,340 863,965
Bristles.....	pounds.....	3,334,698 2,354,645
Butter.....	cwts.....	1,927,842 51,223,180
Margarine.....	do.....	1,241,690 18,275,395
Candles of all sorts.....	do.....	45,865 490,610
Caoutchouc.....	do.....	236,310 13,086,845
Cheese.....	do.....	1,907,999 22,454,850
Chemical products and manufactures.....		7,074,980
China, porcelain, and earthenware.....	cwts.....	184,443 3,251,110
Clocks.....		2,272,780
Cocoa.....	pounds.....	26,507,791 4,005,995
Coffee.....	cwts.....	1,035,136 21,596,860
Confectionery and succades.....	do.....	69,561 825,640
Corn:		
Wheat.....	do.....	58,551,887 112,552,510
Barley.....	do.....	17,400,910 24,823,695

Table showing imports by articles in 1889—Continued.

Articles.	Quantity.	Value.
Corn—Continued.		
Oats.....cwt.....	15,990,567	\$22,352,100
Maize.....do.....	36,192,325	42,901,610
Other kinds.....do.....	5,999,495	9,445,725
Flour—		
Wheat.....do.....	14,672,082	42,719,540
Other kinds.....do.....	532,593	1,133,075
Total.....	149,339,769	255,928,235
Cotton :		
Raw.....cwt.....	17,298,770	228,210,140
Manufactures.....		12,355,190
Drugs :		
Peruvian bark.....cwt.....	129,357	2,145,050
Opium.....pounds.....	492,115	1,492,180
Unenumerated.....		4,072,965
Dyeing or tanning stuffs :		
Cochineal, granilla, and dust.....cwt.....	8,186	253,745
Cutch and gambier.....tons.....	25,011	3,379,100
Extracts.....		2,514,595
Indigo.....cwt.....	90,238	8,888,085
Dyes from coal tar.....		3,046,180
Madder, madder root, garancin, and munjeet.....cwt.....	14,236	85,920
Sumac.....tons.....	12,514	702,585
Valonia.....do.....	31,376	2,273,150
Unenumerated.....cwt.....	1,351,468	3,775,965
Dyewoods.....tons.....	91,979	2,698,300
Eggs.....thousands.....	1,131,900	15,637,950
Feathers, ornamental.....pounds.....	796,537	4,115,035
Fish.....cwt.....	1,988,029	12,943,115
Flax and hemp :		
Flax, dressed and undressed.....do.....	1,587,422	14,189,000
Tow or codilla of flax and hemp.....do.....	318,979	1,834,625
Jute.....tons.....	1,904,857	16,633,285
Flowers, artificial.....	383,453	27,143,565
Fruits :		
Currants.....cwt.....		1,726,415
Raisins.....do.....	1,173,306	7,103,540
Oranges and lemons.....bushels.....	573,516	4,553,380
Hemp and other like substances (except jute), dressed and undressed.....do.....	5,847,521	8,658,175
Raw, exclusive of nuts.....do.....	5,791,202	10,609,220
Glass of all kinds.....cwt.....	1,798,129	8,910,965
Guano.....tons.....	28,604	998,915
Gum of all sorts.....cwt.....	327,316	5,371,090
Gutta-percha.....do.....	47,832	2,875,145
Hair :		
Goats' hair or wool.....pounds.....	20,991,573	4,971,980
Manufactures of hair and goats' wool.....		710,155
Hides (raw, dry, and wet).....cwt.....	1,224,105	15,387,170
Hops.....do.....	199,384	3,565,470
Lace and articles thereof.....		5,163,095
Lard.....cwt.....	1,192,654	10,881,660
Leather.....pounds.....	104,892,898	33,369,220
Leather gloves.....pairs.....	18,902,904	8,527,580
Meat :		
Unenumerated, salted or fresh.....cwt.....	1,307,920	13,765,370
Preserved, other than salted.....do.....	641,705	8,171,115
Metals :		
Copper ore and regulus.....tons.....	250,567	21,173,095
Copper unwrought, part wrought, and old copper.....do.....	41,342	10,602,820
Iron ore.....do.....	4,031,265	15,123,025

Table showing imports by articles in 1889—Continued.

Articles.	Quantity.	Value.
Metals—Continued.		
Iron in bars.....tons...	111, 779	\$5, 169, 870
Iron and steel, wrought or manufactured.....cwts...	4, 607, 430	15, 045, 240
Lead, pig and sheet.....tons...	145, 203	9, 376, 435
Silver ore.....		11, 143, 955
Tin in blocks, ingots, bars, or slabs.....cwts...	601, 849	13, 986, 370
Zinc, crude, in cakes.....tons...	56, 420	5, 374, 715
Zinc manufactures.....cwts...	384, 070	2, 083, 675
Musical instruments.....		4, 473, 435
Nuts and kernels used for expressing oil therefrom.....tons...	61, 857	3, 423, 175
Oils :		
Fish.....do.....	20, 956	2, 201, 800
Palm.....cwts...	1, 031, 440	5, 459, 610
Cocoanut.....do.....	213, 090	1, 388, 010
Olive.....tuns...	22, 882	4, 087, 475
Seed.....tons...	17, 039	2, 308, 455
Turpentine.....cwts...	408, 074	3, 313, 405
Oilseed cake.....tons...	255, 918	8, 505, 530
Onions, raw.....bushels...	3, 854, 453	3, 360, 395
Painters' colors and pigments.....		5, 158, 605
Paper :		
For printing or writing.....cwts...	294, 097	1, 984, 440
Other, except hangings.....do.....	1, 815, 845	7, 304, 275
Petroleum, refined and unrefined.....gallons...	102, 881, 256	12, 944, 735
Pork.....cwts...	386, 700	3, 394, 610
Potatoes.....do.....	1, 864, 426	3, 680, 195
Poultry, game, and rabbits.....		4, 074, 630
Pyrites of iron and copper.....tons...	644, 343	6, 056, 955
Rags and paper-making materials :		
Rags.....do.....	42, 443	2, 131, 610
Esparto and other materials.....do.....	385, 717	10, 437, 475
Rice.....cwts...	6, 585, 779	13, 448, 000
Resin.....do.....	1, 321, 620	1, 457, 835
Saltpeter.....do.....	331, 390	1, 455, 105
Cubic niter.....do.....	2, 351, 310	5, 512, 915
Seeds :		
Clover and grass.....do.....	296, 360	3, 039, 260
Cotton.....tons...	277, 394	9, 531, 100
Flax.....quarters...	2, 269, 495	22, 851, 015
Rape.....do.....	449, 250	4, 026, 830
Silk :		
Knubs, or husks, and waste.....cwts...	79, 435	4, 497, 370
Raw.....pounds...	3, 122, 911	10, 962, 740
Thrown.....do.....	607, 651	2, 553, 670
Silk manufactures :		
Broad stuffs.....		28, 869, 570
Ribbons.....		15, 712, 495
Other manufactures.....		14, 364, 630
Total.....		58, 945, 695
Skins and furs :		
Goat, undressed.....number...	6, 981, 290	3, 579, 560
Seal.....do.....	738, 028	3, 372, 335
Sheep and lamb, undressed.....do.....	11, 302, 380	6, 218, 960
Furs of all sorts.....do.....	27, 401, 543	5, 115, 875
Spices :		
Cinnamon.....pounds...	1, 608, 440	254, 935
Pepper.....do.....	29, 787, 328	4, 282, 460
All other sorts.....do.....	19, 953, 132	2, 585, 060

Table showing imports by articles in 1889—Continued.

Articles.	Quantity.	Value.
Spirits :		
Rum.....proof gallons...	4,087,109	\$1,700,130
Brandy.....do.....	2,858,774	6,580,685
Other foreign and colonial spirits.....do.....	3,632,846	1,993,425
Total.....do.....	10,578,729	10,274,240
Sugar :		
Refined, and sugar candy.....cwt.....	8,978,260	44,196,610
Unrefined.....do.....	17,550,147	68,072,595
Molasses.....do.....	391,475	718,310
Tallow and stearine.....do.....	1,244,031	8,229,005
Tea.....pounds.....	222,147,661	49,939,835
Teeth (elephant, sea cow, and sea horse).....cwt.....	12,114	2,869,100
Tobacco :		
Manufactured (cigars and snuff).....pounds.....	4,214,123	8,608,875
Unmanufactured.....do.....	74,978,458	10,843,545
Toys.....		3,574,140
Watches.....		3,455,030
Wine.....gallons.....	15,900,749	29,527,365
Wood and timber :		
Hewn.....loads.....	2,392,223	28,183,820
Sawn or split.....do.....	5,319,326	65,719,405
Staves.....do.....	170,086	3,470,490
Mahogany.....tons.....	39,859	1,772,505
Wool (sheep, lamb, alpaca, and the llama tribe).....pounds.....	700,903,057	143,073,685
Woolen rugs.....tons.....	31,335	3,347,190
Woolen manufactures.....		48,980,340
Woolen and worsted yarns :		
Berlin wool and fancy yarns used for fancy purposes.....pounds.....	1,244,985	1,096,435
Yarn for weaving.....do.....	19,051,354	11,020,780
Yeast, dried.....cwt.....	261,464	3,616,600
All other articles.....		172,551,240
Grand total.....		2,138,187,975

EXPORTS.

The total value of exports was \$1,573,528,705, an increase of \$84,102,525 compared with 1888.

The value of British and Irish produce exported was \$1,240,241,285, or 79 per cent. of the total exports, an increase of \$71,028,250 compared with the previous year.

Foreign and colonial produce exported was valued at \$333,287,420, an increase of \$13,074,275.

The principal articles of British and Irish produce exported were: Apparel and slops, \$25,000,000, an increase of \$1,500,000; coals, etc., \$73,500,000, an increase of \$17,000,000; cotton yarn, \$58,500,000, a slight increase; cotton manufactures, \$293,500,000, a decrease of \$8,000,000; hardware and cutlery, \$15,000,000, a slight decrease; leather, wrought and unwrought, \$20,000,000; linen manufactures, \$28,500,000, an increase of \$1,000,000; jute manufactures, \$13,500,000, an increase of \$3,500,000; machinery, \$76,000,000, an increase of \$12,000,000; iron and steel, \$146,000,000, an increase of \$13,500,000; silk manufactures, \$12,500,000, a slight decrease; woolen

and worsted yarn, \$21,500,000, an increase of \$1,500,000; woollen and worsted manufactures, \$106,500,000, an increase of \$7,000,000.

The principal articles of foreign and colonial produce exported were: Coffee, \$13,000,000; raw cotton, \$29,000,000; rice, \$7,000,000; tea, \$8,500,000; and wool, \$77,000,000. Wool formed nearly 25 per cent. of the total exports of foreign and colonial produce.

Table showing exports by articles in 1889.

Articles.	Quantity.	Value.
<i>British and Irish produce.</i>		
Alkali.....cwt.....	6,032,200	\$7,864,610
Animals (horses).....number.....	14,266	4,723,955
Apparel and slops.....		24,892,565
Arms and ammunition :		
Firearms (small).....number.....	204,109	1,433,565
Gunpowder.....pounds.....	10,679,600	1,368,500
All other kinds.....		5,858,165
Bags (empty).....dozens.....	3,110,841	3,923,540
Beer and ale.....barrels.....	495,926	9,289,730
Biscuit and bread.....cwt.....	206,791	2,984,110
Bleaching materials.....do.....	1,524,600	2,816,565
Books, printed.....do.....	155,123	6,474,835
Butter.....do.....	25,191	727,160
Candles of all sorts.....pounds.....	12,669,100	1,156,985
Caoutchouc, manufactures of.....		5,627,775
Carriages, railway.....		9,876,675
Cement.....cwt.....	12,633,200	6,158,245
Cheese.....do.....	12,852	245,840
Chemical products and dyestuffs.....		13,875,595
Clocks and watches.....		696,750
Coals, etc. :		
Coals, cinders, and fuel.....tons.....	28,956,445	73,909,950
Products of coal, except dyes.....		5,559,125
Cordage and twine.....cwt.....	192,860	2,450,330
Corn :		
Wheat.....do.....	121,109	237,995
Wheat flour.....do.....	215,203	580,470
Other kinds.....		1,385,410
Cotton yarn.....pounds.....	252,435,800	58,558,745
Cotton manufactures :		
Piece goods—		
White or plain.....yards.....	3,465,464,300	161,739,765
Printed, checked, or dyed.....do.....	1,535,687,400	95,178,335
Mixed materials.....do.....	87,400	23,255
Stockings and socks.....dozen pairs.....	1,443,701	1,973,215
Thread—		
For sewing.....pounds.....	17,291,000	13,463,005
All other kinds.....		21,589,655
Total.....		293,967,230
Earthen and china ware.....		11,433,440
Fish :		
Herrings.....barrels.....	1,151,450	6,189,285
Other sorts.....		2,644,010
Furniture, cabinet, and upholstery wares.....		4,280,100
Glass :		
Plate.....square feet.....	3,896,673	1,215,635
Flint.....cwt.....	121,166	1,375,295
Common bottles.....do.....	982,388	2,323,710
Other sorts.....do.....	216,983	822,035

Table showing exports by articles in 1889—Continued.

Articles.	Quantity.	Value.
<i>British and Irish produce—Continued.</i>		
Haberdashery and millinery.....		\$11,260,705
Hardware and cutlery.....		14,945,940
Hats of all sorts.....dozens	1,359,772	6,637,765
Implements and tools of industry.....		6,265,465
Leather:		
Unwrought.....cwts.	143,099	6,569,150
Wrought—		
Boots and shoes.....dozen pairs...	665,909	8,046,710
Other sorts.....		2,069,370
Saddlery and harness.....		2,872,445
Linen and jute yarn:		
Linen yarn.....pounds	13,944,700	4,246,315
Jute yarn.....do	34,179,200	2,048,255
Linen and jute manufactures:		
Linen manufactures—		
White or plain.....yards	164,590,200	19,085,065
Printed, checked, or dyed.....do	12,422,200	1,632,095
Sailcloth and sails.....do	3,617,800	832,740
Thread for sewing.....pounds	2,800,200	1,825,400
Other sorts.....		5,512,025
Total.....		8,887,325
Jute manufactures.....yards	265,084,700	13,651,720
Machinery:		
Steam-engines.....		19,135,295
Other sorts.....		57,234,255
Manure.....		10,250,850
Medicines.....		4,857,075
Metals:		
Iron—		
Old, for remanufacture.....tons	146,719	2,160,875
Pig and puddled.....do	1,190,371	14,941,620
Bar, angle, bolt, and rod.....do	252,382	8,122,880
Railroad, of all sorts.....do	1,089,892	26,654,290
Wire.....do	55,896	4,161,145
Hoops, sheets, and boiler plates.....do	385,723	20,668,335
Tinned plates.....do	430,650	30,150,025
Cast or wrought, and all other manufactures.....do	463,526	27,157,110
Steel—		
Unwrought.....do	149,882	8,495,050
Manufactures of steel or of steel and iron combined.....do	21,141	3,199,315
Total.....do	4,186,182	145,710,645
Copper—		
Unwrought (ingots, cakes, or slabs).....cwts	650,713	7,684,585
Wrought or partly wrought—		
Mixed or yellow metal.....do	306,459	4,087,150
Other sorts.....do	309,300	4,662,315
Brass of all sorts.....do	107,663	2,430,245
Lead (pig, sheet, and pipe).....tons	52,040	3,789,150
Tin, unwrought.....cwts	108,583	2,613,750
Zinc, wrought and unwrought.....do	132,862	519,170
Musical instruments.....		1,113,040
Oil and other floor cloth.....yards	17,195,200	4,095,620
Oilseed.....tons	68,629	7,452,970
Painters' colors.....		7,792,895
Paper, other than hangings.....cwts	928,837	8,010,375
Pickles, vinegar, and sauces.....		6,596,055

Table showing exports by articles in 1889—Continued.

Articles.	Quantity.	Value.
<i>British and Irish produce—Continued.</i>		
Pictures.....number...	15,523	\$1,444,530
Plate and plated ware.....		2,191,160
Provisions, not otherwise described.....		4,383,510
Rags and materials for paper.....tons...	58,860	2,367,270
Salt.....do.....	666,757	2,692,570
Silk (thrown, twist, and yarn).....		2,549,095
Silk manufactures:		
Broad piece goods.....yards...	9,618,671	7,371,830
O. her kinds.....		5,157,135
Total.....		12,528,965
Skins and furs:		
British.....		2,210,580
Foreign (British dressed).....number...	1,737,237	2,641,880
Soap.....cwt...	493,392	2,517,325
Spirits.....gallons..	3,431,320	6,012,795
Stationery, other than paper.....		4,828,665
Sugar, refined.....cwt...	755,015	3,045,575
Telegraph wire.....		5,192,700
Umbrellas and parasols.....		3,065,905
Wool, sheep and lambs'.....pounds...	21,768,400	4,853,750
Woolen and worsted yarn.....do.....	45,360,000	21,707,570
Woolen and worsted manufactures:		
Cloths, coatings, etc., unmixed and mixed.....yards...	62,767,000	53,020,245
Flannels, blankets, blanketing, and baizes.....do.....	23,379,400	5,674,660
Stuffs, mixed and unmixed.....do.....	178,040,700	32,733,180
Carpets and druggets.....do.....	12,090,000	6,357,530
All other sorts.....		8,837,845
Total.....		106,624,460
Other articles.....		65,820,380
Total British and Irish produce.....		1,240,241,285
<i>Foreign and colonial produce.</i>		
Bacon and hams.....cwt...	277,255	2,348,615
Caoutchouc.....do.....	130,506	7,057,770
Chemical manufactures and products.....		1,664,170
Cocoa.....pounds...	8,277,500	1,299,475
Coffee.....cwt...	676,716	13,349,205
Corn:		
Wheat.....do.....	348,728	718,940
Wheat meal or flour.....do.....	172,234	565,875
Cotton:		
Raw.....cwt...	2,478,592	29,358,000
Manufactures—		
Piece goods.....yards...	27,214,850	2,407,415
Other articles.....		490,595
Drugs:		
Peruvian bark.....cwt...	120,591	1,288,400
Opium.....pounds...	409,738	1,146,650
Unenumerated.....		1,829,220
Dyeing or tanning stuffs:		
Cochineal, granilla, and dust.....cwt...	7,157	186,600
Cutch and gambier.....tons...	10,449	1,461,420
Indigo.....cwt...	58,784	5,852,300
Madder, madder root, garancin, and munjeet.....do.....	2,305	15,425
Feathers, ornamental.....pounds...	383,526	2,111,095
Fish, cured or salted.....cwt...	293,370	2,367,680

Table showing exports by articles in 1889—Continued.

Articles.	Quantity.	Value.
<i>Foreign and colonial produce—Continued.</i>		
Flax and hemp :		
Flax, dressed and undressed.....cwts...	79,476	\$691,220
Tow or codilla of flax and hemp.....do.....	25,219	147,520
Hemp and other like substances (except jute), dressed and undressed.do.....	715,188	7,150,675
Jute.....tons.....	115,630	8,726,335
Fruits :		
Currants.....cwts.....	78,579	386,970
Raisins.....do.....	84,899	626,180
Oranges and lemons.....bushels.....	543,779	744,370
Guano.....tons.....	4,122	155,890
Gum of all sorts.....cwts.....	188,572	3,052,625
Hair, manufactures of, and goats' wool.....do.....		6,585
Hides (raw, dry, and wet).....cwts.....	419,469	6,014,520
Leather.....pounds.....	19,204,998	7,662,595
Metals :		
Copper (unwrought, part wrought, and old copper).....tons.....	14,557	3,578,805
Iron in bars.....do.....	75,366	2,821,325
Iron and steel manufactures, unenumerated.....cwts.....	800,493	2,852,135
Tin in blocks, ingots, bars, or slabs.....do.....	349,973	8,145,695
Zinc, crude, in cakes.....tons.....	1,211	115,650
Nuts and kernels used for expressing oil.....do.....	41,485	2,273,560
Oil :		
Palm.....cwts.....	616,945	3,276,655
Cocconut.....do.....	82,733	544,135
Olive.....tuns.....	3,691	731,465
Quicksilver.....pounds.....	4,317,852	2,426,280
Rice.....cwts.....	3,020,225	7,046,275
Saltpeter.....do.....	47,206	207,710
Cubic niter.....do.....	74,854	122,300
Seeds :		
Flax.....quarts.....	241,213	2,461,105
Rape.....do.....	62,768	684,010
Unenumerated, used for obtaining oil.....do.....	113,681	1,102,895
Silk :		
Raw.....pounds.....	394,080	1,317,515
Thrown.....do.....	30,746	114,670
Manufactures.....do.....		4,813,010
Skins and furs :		
Goat, undressed.....number.....	7,452,504	3,101,715
Seal.....do.....	33,406	304,235
Furs of all sorts.....do.....	18,079,941	4,995,460
Spices :		
Cinnamon.....pounds.....	1,283,548	205,895
Pepper.....do.....	21,958,306	3,170,335
Other sorts.....cwts.....	134,273	1,890,830
Spirits :		
Rum.....proof gallons.....	1,025,627	866,595
Brandy.....do.....	113,276	326,695
Geneva and other foreign and colonial spirits.....gallons.....	668,793	1,204,145
Sugar :		
Refined, and candy.....cwts.....	168,591	839,660
Unrefined.....do.....	736,371	3,021,030
Molasses.....do.....	174,318	345,465
Tallow and stearine.....do.....	301,311	1,893,245
Tea.....pounds.....	36,064,040	8,711,025
Teeth (elephant, sea cow, and sea horse).....cwts.....	7,671	1,888,590
Tobacco :		
Unmanufactured.....pounds.....	5,369,216	812,035
Manufactured (cigars).....do.....	304,337	841,105
Other sorts, including snuff.....do.....	1,231,579	545,710

Table showing exports by articles in 1889—Continued.

Articles.	Quantity.	Value.
<i>Foreign and colonial produce—Continued.</i>		
Wine.....gallons...	1,334,663	\$3,393,535
Wool (sheep, lamb, alpaca, and llama).....pounds...	363,647,360	77,142,150
Woolen manufactures.....		4,051,660
All other articles.....		57,953,575
Total foreign and colonial produce.....		333,287,430

IMPORTS AND EXPORTS BY COUNTRIES.

Table showing the value of imports and exports from and to the various foreign countries and British possessions.

Countries.	Imports.	Exports.
<i>Foreign:</i>		
Argentine Republic.....	\$10,080,910	\$54,488,450
Austrian territories.....	11,434,170	6,960,450
Belgium.....	88,374,385	68,047,875
Brazil.....	25,353,140	33,751,745
Central America.....	5,908,513	5,224,505
Chile.....	16,322,865	16,149,813
China.....	30,577,955	25,944,330
Denmark proper and Iceland.....	39,229,385	14,070,395
Danish West Indies.....	25,145	417,320
Ecuador.....	362,150	1,389,205
Egypt.....	43,103,010	15,053,185
France.....	228,901,385	110,506,110
Algeria.....	3,290,410	1,458,825
Possessions in Senegambia.....	72,575	528,395
Possessions in India.....	9,675	4,450
Germany.....	135,524,160	155,743,655
Greece.....	9,321,485	4,686,265
Haiti and San Domingo.....	235,615	1,313,450
Holland.....	133,396,080	80,918,930
Java and other possessions in the Indian Sea.....	11,070,870	8,940,320
Italy.....	16,150,655	40,101,685
Japan.....	4,886,030	20,276,930
Mexico.....	2,329,970	8,105,530
Morocco.....	4,780,095	3,586,465
New Granada (Republic of Colombia).....	1,226,450	6,138,000
Peru.....	6,469,885	5,368,445
Portugal.....	15,525,380	14,959,893
Azores and Madeira.....	737,965	1,107,160
Roumania.....	16,023,880	6,544,110
Russia—		
Northern ports.....	68,948,370	36,430,505
Southern ports.....	66,824,080	6,785,775
Spain.....	57,794,285	24,539,420
Canary Islands.....	615,955	2,180,520
Fernando Po.....	32,135	41,470
West India Islands.....	522,435	13,835,775
Philippine Islands.....	11,658,930	7,961,920
Sweden and Norway.....	63,522,800	31,963,090
Turkey.....	26,326,865	33,723,305
United States of America.....	477,307,375	219,394,670
Uruguay.....	2,252,655	12,348,315
Venezuela.....	1,423,330	4,012,895

Table showing the value of imports and exports, etc.—Continued.

Countries.	Imports.	Exports.
Foreign—Continued.		
Western coast of Africa.....	\$5,079,845	\$7,434,815
Other countries.....	8,732,365	8,941,660
Total.....	1,651,857,620	1,121,379,750
British possessions:		
Australia.....	134,022,960	129,568,245
British Honduras.....	1,333,615	597,830
British India.....	180,996,020	161,685,675
Cape of Good Hope and Natal.....	30,589,250	48,924,410
Ceylon.....	14,111,785	4,068,260
Channel Islands.....	4,943,340	4,000,955
Gibraltar.....	230,630	4,220,595
Gold Coast.....	3,713,770	2,590,380
Hongkong.....	5,645,950	11,890,985
Malta.....	694,810	5,053,780
Mauritius.....	2,107,685	1,650,800
North American colonies.....	60,956,850	47,035,370
Straits Settlements.....	27,085,170	12,602,345
West India Islands and Guinea.....	16,902,535	16,799,795
West Africa settlements.....	919,145	1,703,500
Other possessions.....	2,176,840	1,936,030
Total.....	486,320,355	452,418,955
Grand total.....	2,138,187,975	1,573,528,705

TRADE WITH THE UNITED STATES.

The total value of the imports from the United States in 1889 was \$477,307,375 and of exports thereto \$219,394,670, leaving a balance of trade in favor of the United States of \$257,912,705.

The imports from the United States were larger than in any year since 1883 and showed an increase on 1888 of \$78,492,285. The articles giving the largest increases were: Animals, \$15,000,000; bacon and hams, \$7,000,000; beef, \$5,000,000; corn, \$20,500,000; raw cotton, \$12,000,000; leather, \$2,500,000; tobacco, \$6,250,000; and wood, \$3,500,000. The articles showing a decrease of any importance were: Copper regulus, \$1,000,000; wheat meal and flour, \$5,500,000; and petroleum, \$585,000.

The exports to the United States were larger than in any of the last 10 years and showed an increase, compared with 1888, of \$13,338,000.

British and Irish produce amounted to \$151,469,710, or 69 per cent. of the total exports, and showed an increase, compared with the previous year, of \$6,984,410. There was an increase in the following articles, viz: Cottons, \$700,000; jute manufactures, \$1,350,000; linens, \$850,000; machinery, \$1,500,000; iron, \$1,200,000; and woollens, \$2,700,000.

Foreign and colonial produce exported amounted to \$67,924,960, an increase of \$6,354,195 compared with 1888. The chief articles showing an increase were: Cotton, \$450,000; indigo, \$500,000; hair, \$650,000; hemp, \$1,500,000; flaxseed, \$1,250,000; skins and furs, \$550,000; wool, \$2,250,000; and woollen manufactures, \$750,000. Raw hides showed a decrease of \$650,000; tin, \$1,000,000; and sugar, \$1,500,000.

Table showing imports from the United States in 1889.

Articles.	Quantity.	Value.
Animals, living :		
Oxen and bulls.....number...	294, 124	\$28, 966, 480
Sheep and lambs.....do.....	18, 690	181, 440
Horses.....do.....	236	68, 535
Bacon and hams.....cwt.....	3, 429, 733	35, 232, 180
Beef :		
Fresh.....do.....	1, 275, 948	14, 132, 580
Salted.....do.....	251, 476	1, 737, 060
Books.....do.....	7, 362	238, 750
Butter.....do.....	110, 292	2, 246, 110
Margarine (butterine).....do.....	833	11, 335
Caoutchouc.....do.....	9, 927	254, 060
Manufactures.....pounds.....	416, 388	251, 985
Cheese.....cwt.....	825, 670	9, 478, 395
Clocks and parts thereof.....do.....		444, 590
Coffee, raw.....cwt.....	38, 197	776, 885
Copper :		
Ore.....tons.....	2, 828	280, 010
Regulus.....do.....	43, 005	6, 042, 470
Unwrought and part wrought.....do.....	4, 125	1, 085, 340
Corn :		
Wheat.....cwt.....	17, 009, 036	34, 095, 875
Barley.....do.....	388, 636	804, 455
Oats.....do.....	148, 946	216, 320
Peas.....do.....	347, 790	566, 725
Maize, or Indian corn.....do.....	22, 501, 135	26, 627, 490
Wheat meal and flour.....do.....	10, 043, 720	28, 308, 315
Oatmeal.....do.....	168, 696	428, 240
Cotton :		
Raw.....do.....	12, 712, 606	167, 726, 355
Manufactures.....do.....		1, 330, 865
Drugs, not otherwise enumerated.....do.....		624, 200
Dyestuffs (extracts).....do.....		239, 460
Farinaceous substances, not otherwise enumerated.....do.....		129, 555
Fish.....cwt.....	463, 062	4, 700, 335
Fruit, raw :		
Apples.....bushels.....	1, 285, 570	1, 793, 350
Unenumerated.....do.....	7, 145	20, 750
Hair, not otherwise enumerated.....do.....		309, 295
Hemp.....cwt.....	4, 419	48, 005
Hides, raw.....do.....	25, 049	270, 975
Hops.....do.....	77, 529	1, 260, 575
Iron and steel manufactures :		
Sewing machines.....do.....		596, 580
Unenumerated.....cwt.....	136, 137	1, 909, 280
Lard.....do.....	1, 150, 195	10, 476, 785
Lead, pig or sheet.....tons.....	4, 588	301, 950
Leather.....pounds.....	49, 484, 991	11, 048, 325
Manures :		
Phosphate of lime and rock.....tons.....	122, 554	1, 360, 230
Unenumerated.....do.....	1, 862	2, 735
Meat, unenumerated :		
Salted or fresh.....cwt.....	13, 720	140, 875
Preserved otherwise than by salting.....do.....	411, 077	4, 656, 195
Musical instruments.....do.....		763, 705
Mutton, fresh.....cwt.....	1, 609	15, 465
Naphtha, wood, not potable.....gallons.....	26, 498	25, 100
Oil :		
Sperm.....tuns.....	622	148, 625
Train or blubber.....do.....	3, 087	328, 220

Table showing imports from the United States in 1889—Continued.

Articles.	Quantity.	Value.
Oil—Continued.		
Animal.....cwt...	91,155	\$922,856
Turpentine.....do.....	387,281	3,088,850
Chemical, essential, or perfumed.....pounds...	54,986	90,710
Oilseed cake.....tons...	194,625	6,462,970
Paraffine.....cwt...	306,338	1,806,805
Perfumery.....pounds...	801,351	154,350
Petroleum.....gallons...	70,739,663	9,664,250
Pork, salted.....cwt...	122,021	1,426,505
Resin.....do.....	1,317,500	1,449,895
Seeds, clover and grass.....do.....	74,210	803,935
Silver ore.....		1,086,940
Skins and furs of all sorts.....		3,830,440
Sugar:		
Refined, and candy.....cwt...	10,207	49,950
Unrefined.....do.....	1,667	9,200
Molasses.....do.....	325,522	599,905
Tallow and stearine.....do.....	420,880	2,679,790
Tar.....barrels...	9,478	28,880
Tobacco:		
Unmanufactured.....pounds...	64,415,213	8,862,855
Manufactured.....do.....	2,715,782	6,019,060
Vegetables, raw.....		149,620
Watches and parts thereof.....		144,520
Wax.....cwt...	3,514	89,355
Wood and timber:		
Hewn.....loads...	148,733	3,173,460
Sawn or split.....do.....	380,126	6,107,425
Staves.....do.....	25,456	821,600
Furniture woods and hard woods.....tons...	49,818	1,832,360
House frames, settings, and joiners' work.....		774,830
Wool, sheep or lambs'.....pounds...	849,880	174,390
All other articles.....		12,044,365
Total.....		477,307,375

Table showing increase or decrease in imports from the United States in 1889 as compared with 1888.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
Animals, living:				
Oxen and bulls.....number...	151,259		\$14,760,025	
Sheep and lambs.....do.....	17,847		171,660	
Horses.....do.....	91		24,585	
Bacon and hams.....cwt...	906,593		7,350,145	
Beef:				
Fresh.....do.....	491,519		5,065,670	
Salted.....do.....	37,697		109,675	
Books.....do.....		672		\$16,815
Butter.....do.....	86,664		1,771,085	
Margarine.....do.....	110		1,020	
Caoutchouc.....do.....	1,013			113,045
Manufactures of.....pounds...	41,978		47,035	
Cheese.....cwt...	13,340			52,440
Clocks and parts thereof.....				14,115
Coffee, raw.....cwt...	1,555		53,445	

Table showing increase or decrease in imports from the United States in 1889, etc.—Continued.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
Copper:				
Ore.....tons...	122			\$20, 360
Regulus.....do.	7, 086			1, 155, 520
Unwrought and part wrought.....do.		823		881, 285
Corn:				
Wheat.....cwt.	2, 365, 464		\$5, 680, 435	
Barley.....do.	336, 216		692, 765	
Oats.....do.	148, 845		216, 210	
Peas.....do.	171, 309		294, 540	
Maize, or Indian corn.....do.	12, 663, 599		13, 411, 620	
Wheat meal and flour.....do.		2, 514, 920		5, 877, 745
Oatmeal.....do.	127, 105		319, 645	
Cotton:				
Raw.....do.	671, 786		12, 092, 420	
Manufactures.....do.			31, 765	
Drugs not otherwise enumerated.....do.			11, 345	
Dyestuffs (extracts).....do.				87, 255
Farinaceous substances not otherwise enumerated.....do.				40, 830
Fish.....cwt.	134, 083		1, 938, 635	
Fruit, raw:				
Apples.....bushels...		363, 320		589, 415
Unenumerated.....do.		8, 088		7, 425
Hair not otherwise enumerated.....do.			126, 200	
Hemp.....cwt.		18, 938		135, 290
Hides, raw.....do.	17, 034		183, 405	
Hops.....do.		11, 766		370, 990
Iron and steel manufactures:				
Sewing machines.....do.			126, 085	
Unenumerated.....cwt.	35, 802		622, 575	
Lard.....do.	316, 546		1, 931, 975	
Lead, pig or sheet.....tons...		1, 581		117, 155
Leather.....pounds...	12, 046, 565		2, 445, 635	
Manures:				
Phosphate of lime and rock.....tons...	11, 185		316, 180	
Unenumerated.....do.	1, 171			835
Meat, unenumerated:				
Salted or fresh.....cwt.	10, 342		108, 235	
Preserved otherwise than by salting.....do.	147, 859		1, 505, 630	
Musical instruments.....do.			75, 295	
Mutton, fresh.....cwt.		5, 548		34, 670
Naphtha, wood, not potable.....gallons...		46, 573		41, 515
Oil:				
Sperm.....tuns...	451		88, 525	
Train or blubber.....do.	2, 356		263, 265	
Animal.....cwt.		14, 088		77, 560
Turpentine.....do.	39, 373		664, 410	
Chemical, essential, or perfumed.....pounds...		8, 712		56, 880
Oilseed cake.....tons...	6, 734		541, 920	
Paraffine.....cwt.		34, 103		379, 325
Perfumery.....pounds...	7, 129			10, 350
Petroleum.....gallons...		1, 477, 997		584, 970
Pork, salted.....cwt.	4, 222		238, 350	
Resin.....do.	12, 322		115, 825	
Seeds, clover and grass.....do.	8, 684		63, 600	
Silver ore.....do.			537, 495	
Skins and furs of all sorts.....do.			1, 094, 375	
Sugar:				
Refined, and candy.....cwt.		31, 398		144, 760

Table showing increase or decrease in imports from the United States in 1889, etc.—Continued.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
Sugar—Continued.				
Unrefined.....cwt.		28,940		\$87,885
Molasses.....do.	46,840		\$73,360	
Tallow and stearine.....do.	109,950		741,640	
Tar.....barrels		2,207	2,015	
Tobacco:				
Unmanufactured.....pounds	27,481,467		3,362,580	
Manufactured.....do.	995,760		2,999,230	
Vegetables, raw.....do.				69,660
Watches and parts thereof.....do.				124,205
Wax.....cwt.	1,511		36,885	
Wood and timber:				
Hewn.....loads	46,801		1,057,720	
Sawn or split.....do.	115,012		2,434,115	
Staves.....do.	4,010		125,840	
Furniture and hard woods.....tons	7,754		356,190	
House frames, fittings, and joiners' work.....do.			188,885	
Wool, sheep or lambs'.....pounds	392,992		101,545	
All other articles.....do.			2,812,030	
Net increase.....do.			78,492,285	

Table showing exports to the United States in 1889.

Articles.	Quantity.	Value.
<i>British and Irish produce.</i>		
Alkali.....cwt.	3,394,300	\$4,197,411
Animals:		
Horses.....number	1,113	354,545
Unenumerated.....do.		66,555
Apparel and haberdashery.....do.		1,981,610
Arms, ammunition, and military stores.....do.		420,855
Bags and sacks, empty.....dozens	151,992	168,760
Beer and ale.....barrels	42,011	898,300
Bleaching materials.....cwt.	860,400	1,571,955
Books, printed.....do.	44,316	1,802,585
Caoutchouc, manufactures of.....do.		281,530
Cement.....tons	196,515	1,929,810
Chemical products and preparations, including dyestuffs.....do.		2,245,790
Clay and manufactures thereof.....do.		410,355
Clocks, watches, and parts thereof.....do.		166,615
Coal:		
Cinders and fuel.....tons	80,755	338,705
Products of, etc., including naphtha, paraffine oil, and petroleum.....do.		66,060
Cordage and twine.....cwt.	5,382	55,235
Cotton yarn.....pounds	881,600	393,810
Cottons:		
Entered by the yard.....yards	49,128,600	5,078,440
Entered at value.....do.		6,454,660
Earthen and china ware.....do.		4,372,115
Flax and hemp, dressed and undressed.....cwt.	33,178	924,795
Furniture, cabinet, and upholstery wares.....do.		243,520
Glass manufactures.....do.		935,130
Hardware and cutlery, unenumerated.....do.		2,008,370
Hats of all sorts.....dozens	29,336	254,225
Hides, raw.....cwt.	6,872	59,775

Table showing exports to the United States in 1889—Continued.

Articles.	Quantity.	Value.
<i>British and Irish produce—Continued.</i>		
Implements and tools.....		\$164,980
Instruments and apparatus (surgical, anatomical, and scientific).....		170,740
Jute:		
Yarn.....pounds	13,994,500	798,825
Manufactures (piece goods).....yards	139,479,900	6,668,000
Leather, wrought and unwrought.....		942,175
Linen yarn.....pounds	683,900	90,165
Linens:		
Entered by the yard.....yards	94,222,600	10,525,520
Entered at value.....		3,971,550
Machinery and millwork.....		4,452,105
Manure.....		309,445
Medicines, drugs, and medicinal preparations.....		282,665
Metals:		
Iron, wrought and unwrought.....tons	578,941	30,936,430
Copper, wrought and unwrought.....cwt.	11,375	159,740
Tin, unwrought.....do.	5,056	121,605
Unenumerated, and manufactures thereof.....		447,180
Oil and floor cloth.....square yards	1,460,600	416,770
Painters' colors and materials.....		735,815
Paper of all sorts.....cwt.	24,429	373,675
Pickles, vinegar, sauces, etc.....		1,180,650
Prints, engravings, drawings, etc.....		201,035
Provisions, including meat.....		63,270
Rags and other materials for making paper.....tons	52,199	2,209,610
Salt.....do.	119,087	654,435
Seeds of all sorts.....cwt.	11,776	99,605
Silk:		
Thrown, twist, or yarn.....		715,080
Manufactures.....		5,777,085
Skins and furs of all sorts.....		3,480,465
Soap.....cwt.	13,025	246,500
Stationery, other than paper.....		410,935
Stones and slates.....		434,170
Sugar, refined, and candy.....cwt.	303	1,310
Telegraph wires and apparatus.....		27,470
Wool, sheep and lambs'.....pounds	12,307,200	2,350,520
Woolen and worsted yarn.....do.	1,062,200	595,385
Woolens:		
Entered by the yard.....yards	64,590,400	24,195,970
Entered at value.....		1,750,280
Yarn (alpaca, mohair, and other sorts).....pounds	406,400	268,510
All other articles.....		7,448,640
Total.....		151,469,710
<i>Foreign and colonial produce.</i>		
Animals (horses).....number	483	149,885
Art, works of, including pictures.....		80,845
Bristles.....pounds	120,799	132,675
Caoutchouc.....cwt.	46,617	2,363,890
Chemical manufactures and products, unenumerated.....		580,290
China and earthen ware.....cwt.	6,513	184,545
Cocoa.....pounds	890,950	159,060
Coffee.....cwt.	20,585	434,735
Cordage, twine, and cable yarn.....		37,485
Cotton:		
Raw.....cwt.	56,364	965,350
Manufactures.....		919,600

Table showing exports to the United States in 1889—Continued.

Articles.	Quantity.	Value.
<i>Foreign and colonial produce—Continued.</i>		
Drugs:		
Peruvian bark.....cwt...	20,071	\$213,545
Opium.....pounds...	140,447	398,195
Unenumerated.....		560,190
Dyeing and tanning stuffs:		
Cochineal.....cwt...	2,296	56,505
Cutch and gambier.....tons...	3,504	530,650
Indigo.....cwt...	14,900	1,301,920
Unenumerated.....do...	36,528	416,575
Farinaceous substances.....		186,660
Feathers:		
Bed.....cwt...	6,263	166,980
Ornaamental.....pounds...	83,506	608,055
Fish, cured or salted.....cwt...	84,667	385,805
Flax, dressed, undressed, and tow or codilla of flax.....do...	83,526	679,040
Fruit:		
Almonds.....do...	14,146	235,075
Currants.....do...	7,891	42,460
Figs and fig cake.....do...	13,822	85,270
Nuts used as fruit.....		117,465
Oranges and lemons.....bushels...	251,631	341,515
Raisins.....cwt...	24,159	172,805
Unenumerated—		
Raw.....bushels...	91,364	229,605
Dried.....cwt...	76,662	285,245
Glass of all kinds.....do...	22,259	164,835
Gum:		
Lac, seed, shell, stick, and dye.....do...	36,136	655,830
All other sorts.....do...	22,738	453,570
Hair:		
Goats' hair or wool.....pounds...	1,938,656	451,240
All other sorts.....		1,517,245
Hemp, dressed, undressed, and tow or codilla of hemp.....cwt...	443,131	4,485,550
Hides, raw.....do...	76,221	1,077,545
Hops.....do...	4,707	82,235
Ivory (teeth of elephants, sea cows, etc.).....do...	1,829	538,715
Jute.....do...	2,978	213,035
Lacc.....		426,720
Leather, dressed and undressed.....pounds...	6,019,033	2,562,615
Linen manufactures.....		87,285
Metals:		
Iron bars, etc.....tons...	37,274	1,409,995
Steel, unwrought.....do...	5,945	209,830
Iron and steel manufactures, unenumerated.....cwt...	47,877	201,165
Lead, pig or sheet.....tons...	419	27,800
Tin in blocks, ingots, bars, or slabs.....cwt...	227,748	5,295,260
Precious stones, unset.....		918,260
Quicksilver.....pounds...	597,535	333,790
Rags and other materials for making paper.....tons...	44,631	2,090,765
Rags, woolen, applicable to other uses than manure, torn up or not.....do...	28	2,420
Rice.....cwt...	126,358	283,635
Seeds:		
Flax.....quarters...	122,157	1,865,815
Unenumerated—		
For expressing oil therefrom.....do...	21,027	207,845
Not for oil.....cwt...	42,275	131,080
Silk manufactures.....		399,240
Skins:		
Goat, undressed.....number...	6,317,439	2,545,685
Sheep.....do...	1,116,881	322,730
Skins and furs of all sorts.....do...	8,337,663	970,269

Table showing exports to the United States in 1889—Continued.

Articles.	Quantity.	Value.
<i>Foreign and colonial produce—Continued.</i>		
Spices of all sorts.....pounds...	11,280,394	\$3,687,420
Spirits, not sweetened, of all sorts.....proof gallons...	50,972	73,780
Sponges.....pounds...	79,458	121,350
Sugar, unrefined.....cwt...	195,404	770,630
Tea.....pounds...	3,563,052	794,350
Toys.....		72,105
Vegetables, unenumerated.....		150,655
Wine.....gallons...	22,813	81,275
Wood (furniture, veneers, and hard wood).....tons...	1,912	134,080
Wool:		
Sheep and lambs'.....pounds...	67,097,581	12,358,090
Other kinds and flocks.....do...	2,116,005	370,745
Woolen manufactures.....		1,768,210
All other articles.....		6,447,465
Total.....		67,924,960
Total of British and foreign produce.....		209,394,670

Table showing increase or decrease in exports to the United States in 1889 as compared with 1888.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
<i>British and Irish produce.</i>				
Alkali.....cwt...		50,000		\$43,235
Animals:				
Horses.....number...		547		89,035
Unenumerated.....			\$7,235	
Apparel and haberdashery.....			333,935	
Arms, ammunition, and military stores.....			121,040	
Bags and sacks, empty.....dozens...		43,041	235	
Beer and ale.....barrels...		3,839		120,665
Bleaching materials.....cwt...		78,100		215,950
Books, printed.....do...	630			46,800
Caoutchouc, manufactures of.....			59,045	
Cement.....tons...	9,457		159,285	
Chemical products and preparations, including dyestuffs.....			172,040	
Clay and manufactures thereof.....			62,780	
Clocks, watches, and parts thereof.....			5,455	
Coal, cinders, and fuel.....tons...		118,685		268,710
Coal, products of (including naphtha, paraffine, paraffine oil, and petroleum).....			4,615	
Cordage and twine.....cwt...	1,062			1,990
Cotton yarn.....pounds...	299,000		172,450	
Cottons:				
Entered by the yard.....yards...	8,815,400		684,180	
Entered at value.....			131,595	
Earthen and china ware.....				60,395
Flax and hemp, dressed and undressed.....cwt...		4,642		117,200
Furniture, cabinet, and upholstery wares.....				5,270
Glass manufactures.....				181,675
Hardware and cutlery, unenumerated.....			179,685	
Hats of all sorts.....dozens...	2,974		32,000	
Hides, raw.....cwt...		48,529		432,390
Implements and tools.....			68,785	

Table showing increase or decrease in exports to the United States in 1889, etc.—Continued.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
<i>British and Irish produce—Continued.</i>				
Instruments and apparatus.....				\$9,145
Jute:				
Yarn.....pounds.....		2,687,300		1,870
Manufactures (piece goods).....yards.....	9,188,500		\$1,352,925	
Leather, wrought and unwrought.....			51,675	
Linen yarn.....pounds.....		75,400		14,185
Linen:				
Entered by the yard.....yards.....	5,624,100		508,370	
Entered at value.....			276,575	
Machinery and millwork.....			1,555,455	
Manure.....			92,970	
Medicines, drugs, and preparations.....			101,905	
Metals:				
Iron, wrought and unwrought.....tons.....		63,730	1,202,455	
Copper, wrought and unwrought.....cwts.....	7,719		91,890	
Tin, unwrought.....do.....		6,139		248,275
Unenumerated, and manufactures thereof.....				36,415
Oil and floor cloth.....square yards.....	583,200		74,725	
Painters' colors and pigments.....			166,740	
Paper of all sorts.....cwts.....	1,796			6,980
Pickles, vinegar, sauces, etc.....				67,515
Prints, engravings, etc.....				29,375
Provisions, including meat.....				416,340
Rags and other materials for making paper.....tons.....	181		29,905	
Salt.....do.....		30,067	28,780	
Seeds of all sorts.....cwts.....	691		5,410	
Silk:				
Thrown, twist, or yarn.....			188,050	
Manufactures.....				342,750
Skins and furs of all sorts.....				359,790
Soap.....cwts.....	4,005		58,320	
Stationery, other than paper.....			32,825	
Stones and slates.....			101,270	
Sugar, refined, and candy.....cwts.....		13,538		45,655
Telegraph wires and apparatus.....				336,725
Wool, sheep and lambs'.....pounds.....		2,004,200		278,605
Woolen and worsted yarn.....do.....	33,500		7,520	
Woolens:				
Entered by the yard.....yards.....	9,448,300		2,852,975	
Entered at value.....			92,300	
Yarn (alpaca, mohair, and other sorts).....pounds.....	216,500		132,460	
All other articles.....				536,960
Net increase.....			6,984,400	
<i>Foreign and colonial produce.</i>				
Animals (horses).....number.....		63	34,345	
Art, works of, including pictures.....				3,490
Bristles.....pounds.....		11,628	18,785	
Caoutchouc.....cwts.....		3,362	87,225	
Chemical manufactures, unenumerated.....				46,855
China and earthen ware.....cwts.....	1,327		26,655	
Cocoa.....pounds.....	189,715		41,760	
Coffee.....cwts.....		11,160		136,400
Cordage, twine, and cable yarn.....				19,000
Cotton:				
Raw.....cwts.....		3,534	7,400	
Manufactures.....			434,155	

Table showing increase or decrease in exports to the United States in 1889, etc.—Continued.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
<i>Foreign and colonial produce—Continued.</i>				
Drugs :				
Peruvian bark.....cwts.....		2,682		\$147,790
Opium.....pounds.....		36,959		150,070
Unenumerated.....				94,780
Dyeing or tanning stuffs :				
Cochineal.....cwts.....	963		\$19,055	
Cutch and gambier.....tons.....	333		125,395	
Indigo.....cwts.....	4,515		512,745	
Unenumerated.....do.....		4,165		60,560
Farinaceous substances.....				
				2,690
Feathers :				
For beds.....cwts.....	2,909		84,560	
Ornamental.....pounds.....		31,928		20,365
Fish, cured or salted.....cwts.....		5,621		30,125
Flax, dressed, undressed, and tow or codilla of flax.....do.....	14,189		215,235	
Fruits :				
Almonds.....do.....	8,565		122,965	
Currants.....do.....	3,760		16,470	
Figs and fig cake.....do.....	9,750		53,795	
Nuts used as fruit.....do.....			44,635	
Oranges and lemons.....bushels.....		51,731		88,620
Raisins.....cwts.....		2,719	2,145	
Unenumerated—				
Raw.....bushels.....		83,514		174,385
Dried.....cwts.....		5,059		94,505
Glass of all kinds.....do.....		5,135		70,320
Gum :				
Lac, seed, shell, stick, and dye.....do.....	5,891		196,375	
All other sorts.....do.....	1,743		4,965	
Hair :				
Goats' hair or wool.....pounds.....	1,103,766		316,150	
All other sorts.....			355,740	
Hemp, dressed, undressed, and tow or codilla of hemp.....				
	115,185		1,653,105	
Hides, raw.....do.....		51,286		694,925
Hops.....do.....	2,056		42,115	
Ivory (teeth of elephants, sea cow, etc.).....do.....	670		204,545	
Jute.....tons.....	828		140,015	
Lace.....			266,725	
Leather, dressed and undressed.....pounds.....	699,297		36,050	
Linen manufactures.....			18,690	
Metals :				
Iron bars, etc.....tons.....		4,734		280,765
Steel, unwrought.....do.....	400			7,295
Iron and steel manufactures, unenumerated.....cwts.....		44,607		815
Lead, pig or sheet.....tons.....		1,932		137,830
Tin in blocks, ingots, bars, or slabs.....cwts.....	4,309			1,147,915
Precious stones, unset.....				121,080
Quicksilver.....pounds.....	230,100		145,360	
Rags and other materials for making paper.....tons.....	2,642		125,005	
Rags, woolen, applicable to other uses than manure, torn up or not.....tons.....		26		2,315
Rice.....cwts.....		149,433		353,215
Seeds :				
Flax.....quarters.....	127,744		1,329,835	
Unenumerated—				
Used for expressing oil.....do.....	11,503		127,895	
Not for oil.....cwts.....	1,688			1,590

Table showing increase or decrease in exports to the United States in 1889, etc.—Continued.

Articles.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
<i>Foreign and colonial produce—Continued.</i>				
Silk manufactures.....			\$246,735	
Skins :				
Goat, undressed.....number...	1,280,786		385,265	
Sheep.....do.....	516,373		173,605	
Skins and furs of all sorts.....do.....	867,386		31,550	
Spices of all sorts.....pounds...	1,871,738		227,305	
Spirits, not sweetened, of all sorts.....proof gallons...		27,272		\$27,420
Sponges.....pounds...	43,348		36,380	
Sugar, unrefined.....cwts...		507,699		1,668,705
Tea.....pounds...		822,701		187,460
Toys.....				23,305
Vegetables, unenumerated.....				69,665
Wine.....gallons...		2,695		2,025
Wood (furniture, veneers, and hard woods).....tons...	268		19,370	
Wool :				
Sheep and lambs'.....pounds...	5,895,030		2,266,300	
Other kinds and flocks.....do.....	186,852			62,140
Woolen manufactures.....			790,090	
All other articles.....			1,345,090	
Net increase.....			6,354,195	
Net increase of British and foreign produce.....			13,338,605	

DECLARED EXPORTS FOR THE UNITED STATES, 1890.

The compilations from the various consulates in the United Kingdom show that the exports to the United States continued to increase up to September 30, 1890. The total for the year ending that date amounted to \$205,507,499 in value, an increase, compared with the corresponding period of 1888-'89, of \$23,040,894.

There was an increase in nearly all the consular districts, the only exception of any importance being Glasgow, where there was a decrease of upwards of \$200,000. The decrease at Leeds was entirely caused by Huddersfield being raised from a consular agency to a commercial agency.

There was an increase from London of \$9,444,492; Liverpool, \$5,131,929; Manchester, \$1,714,485; Bradford, \$1,421,380; and Nottingham, \$1,177,034.

Table showing value of declared exports from the United Kingdom to the United States for the years ended September 30, 1889 and 1890.

District.	Articles.	1889.	1890.	Increase or decrease.
Belfast.....	Linens and cottons.....	\$9,230,991.36	\$9,485,669.59	+ \$254,678.23
Birmingham.....	Hardware.....	3,377,056.68	4,158,756.78	+ 781,700.10
Bradford.....	Stuff goods.....	22,266,640.77	23,688,021.63	+ 1,421,380.86
Bristol.....	Woolens.....	373,304.00	444,765.80	+ 71,461.80
Cardiff.....	Tin plate.....	10,490,680.32	11,157,240.35	+ 666,560.03
Cork.....	Hidcs.....	112,578.87	125,013.70	+ 12,434.83
Dublin.....	Beer.....	986,454.56	1,168,728.41	+ 182,273.85
Dundee.....	Burlaps.....	9,377,144.93	10,045,296.86	+ 668,151.93
Dunfermline.....	Linens.....	2,234,920.27	2,210,262.57	— 24,657.70
Falmouth.....	China clay.....	126,114.60	138,701.76	+ 12,587.16
Glasgow.....	Cottons.....	8,166,578.88	7,964,485.51	— 202,093.47
Huddersfield.....	Woolens and worsteds.....	.....	2,486,120.90	+ 2,486,120.90
Hull.....	Colors.....	510,816.07	680,017.93	+ 169,201.86
Leeds.....	Woolens and worsteds.....	6,018,425.98	4,144,232.49	— 1,874,193.49
Leith.....	Books.....	1,064,708.81	1,031,857.88	— 32,850.93
Liverpool.....	Tin plates.....	33,896,825.14	39,028,754.69	+ 5,131,929.55
London.....	.....	47,385,928.17	56,830,421.06	+ 9,444,492.89
Manchester.....	Cottons.....	12,099,290.10	13,813,775.50	+ 1,714,485.40
Newcastle-on-Tyne.....	Chemicals.....	1,998,870.04	2,371,660.65	+ 372,790.61
Nottingham.....	Lace.....	5,784,667.42	6,961,701.49	+ 1,177,034.07
Plymouth.....	China clay.....	237,204.39	283,740.07	+ 46,535.68
Sheffield.....	Cutlery.....	2,964,488.41	3,364,415.14	+ 399,926.73
Southampton.....	.....	7,046.47	7,735.32	+ 688.85
Tunstall.....	Earthenware.....	3,755,869.02	3,916,123.71	+ 160,254.69
Total.....	.....	182,466,605.26	205,507,499.69	+ 23,040,894.43

SHIPPING.

The total tonnage of British and foreign vessels entered and cleared with cargoes and in ballast at ports in the United Kingdom, from and to foreign countries and British possessions, in 1889 was: Entered—British, 25,945,414 tons, an increase of 996,090 tons; foreign, 9,578,861 tons, an increase of 575,443 tons; and cleared—British, 26,524,240 tons, an increase of 1,078,310 tons; foreign, 9,841,380 tons, an increase of 720,907 tons.

The number of sailing vessels employed in the home and foreign trades carrying the British flag in 1889 was 11,969, with a tonnage of 2,976,346, manned by 87,765 persons, a decrease, respectively, of 323 vessels, 77,713 tons, and 2,829 persons compared with 1888. Steam vessels numbered 5,585, of 4,664,808 tons, manned by 142,498 persons, an increase of 293 vessels, 366,979 tons, and 9,419 persons, or a total decrease in the number of vessels of 30, but an increase in tonnage of 289,266 and persons employed 6,590.

The number and tonnage of sailing and steam vessels built in the United Kingdom (exclusive of vessels built for foreigners and of vessels built for Her Majesty's navy) in 1889 were: 277 sailing vessels of 117,481 tons, an increase of 8 vessels and 41,785 tons; and 582 steam vessels of 554,024 tons, an increase of 117 vessels and 146,579 tons; or a total increase of 125 vessels and 188,364 tons.

There were 17 sailing vessels of 19,666 tons and 210 steam vessels of 163,558 tons built in 1889 for foreigners for war and mercantile purposes.

The number of vessels belonging to the United Kingdom totally lost in 1888 was 429 sailing vessels of 115,946 tons, involving the loss of 724 seamen and 60 passengers, an increase of 65 vessels of 17,744 tons, but a decrease of 48 seamen and 211 passengers lost. The number of steamships lost was 115 of 73,512 tons and of lives lost 379 seamen and 721 passengers, being a decrease of 21 vessels of 26,472 tons and of lives lost of 375 seamen, but an increase of 630 passengers compared with 1887.

Table showing number and tonnage of sailing vessels that entered and cleared at ports in the United Kingdom.

ENTERED.

Flag.	1888.		1889.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Austrian	78	46,959	70	42,618	.....	.....	8	4,341
Belgian	4	1,014	7	3,023	3	2,009	.....	.....
British	6,822	2,814,551	6,808	2,703,884	.....	.....	14	110,667
Danish	1,694	238,759	1,810	259,400	116	20,641	.....	.....
Dutch	401	92,600	357	80,296	.....	.....	44	12,304
French	1,280	184,147	1,337	179,020	57	.....	.....	5,126
German	1,824	519,997	1,676	486,563	.....	.....	148	33,434
Italian	383	234,979	310	191,291	.....	.....	73	43,688
Norwegian	4,998	1,744,776	5,424	1,896,249	426	151,473	.....	.....
Russian	534	168,135	571	182,158	37	14,023	.....	.....
Spanish	74	23,129	89	26,783	15	3,654	.....	.....
Swedish	1,179	316,200	1,154	318,226	.....	.....	25	.....
United States	83	86,493	72	106,139	.....	19,646	11	.....
Other countries	23	10,581	27	12,320	4	1,737	.....	.....
Total	19,377	6,482,320	19,712	6,487,971	*335	*5,651	.....	.....

CLEARED.

Austrian	84	51,361	62	35,490	.....	.....	22	15,871
Belgian	4	1,205	1	73	.....	.....	3	1,132
British	6,794	2,912,666	6,536	2,745,473	.....	.....	258	167,193
Danish	1,869	268,999	1,966	289,259	97	20,260	.....	.....
Dutch	426	99,947	356	85,352	.....	.....	70	14,595
French	1,253	187,205	1,310	181,689	57	.....	.....	5,516
German	1,819	527,622	1,753	517,800	.....	.....	66	9,822
Italian	390	235,174	301	185,099	.....	.....	89	50,075
Norwegian	4,963	1,727,978	5,550	1,938,930	587	210,952	.....	.....
Russian	512	158,988	599	191,429	87	32,441	.....	.....
Spanish	76	21,707	84	23,999	8	2,292	.....	.....
Swedish	1,160	315,443	1,197	324,711	37	9,268	.....	.....
United States	83	89,275	68	100,484	.....	11,209	15	.....
Other countries	42	19,956	38	17,936	.....	.....	4	2,020
Total	19,475	6,617,526	19,821	6,637,724	*346	*20,198	.....	.....

* Not increase.

Table showing number and tonnage of steam vessels that entered and cleared at ports in the United Kingdom.

ENTERED.

Flag.	1888.		1889.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Austrian.....	35	30,333	29	22,701	.....	.....	6	7,632
Belgian.....	1,076	332,929	1,238	398,210	162	65,281	.....	.....
British.....	30,642	22,134,773	31,869	23,241,530	1,227	1,106,757	.....	.....
Danish.....	1,088	527,653	1,172	595,593	84	67,940	.....	.....
Dutch.....	1,259	942,711	1,210	866,067	.....	.....	49	76,644
French.....	1,685	806,279	1,685	746,324	.....	.....	.....	59,955
German.....	2,200	1,273,492	2,486	1,450,773	286	177,281	.....	.....
Italian.....	30	44,157	26	36,857	.....	.....	4	7,300
Norwegian.....	790	304,333	1,062	445,607	272	141,274	.....	.....
Russian.....	87	51,370	116	70,220	29	18,850	.....	.....
Spanish.....	515	480,337	565	562,146	50	81,809	.....	.....
Swedish.....	664	396,076	747	430,638	83	34,562	.....	.....
United States.....	21	43,637	29	61,993	8	18,356	.....	.....
Other countries.....	104	102,342	106	107,645	2	5,303	.....	.....
Total.....	40,196	27,470,422	42,340	29,036,304	2,144	1,565,882	.....	.....

CLEARED.

Austrian.....	37	28,644	32	24,987	.....	.....	5	3,657
Belgian.....	1,061	327,461	1,206	391,088	145	63,627	.....	.....
British.....	31,025	22,533,264	32,509	23,778,767	1,484	1,245,503	.....	.....
Danish.....	1,113	537,949	1,209	615,878	96	77,929	.....	.....
Dutch.....	1,271	951,961	1,210	888,581	.....	.....	61	63,380
French.....	1,674	799,518	1,727	760,535	53	.....	.....	38,983
German.....	2,193	1,285,939	2,514	1,501,179	321	215,240	.....	.....
Italian.....	44	61,591	29	42,903	.....	.....	15	18,688
Norwegian.....	316	319,556	1,065	456,425	249	136,869	.....	.....
Russian.....	95	56,887	119	69,312	24	12,425	.....	.....
Spanish.....	524	481,995	595	595,270	71	113,275	.....	.....
Swedish.....	678	404,912	726	418,106	48	13,194	.....	.....
United States.....	21	44,743	27	56,994	6	12,251	.....	.....
Other countries.....	132	114,457	131	127,871	.....	13,414	.....	.....
Total.....	40,684	27,948,877	43,099	29,727,896	2,415	1,779,019	.....	.....

*Net increase.

Table showing number and tonnage of sailing and steam vessels that entered and cleared at ports in the United Kingdom.

ENTERED.

Flag.	1888.		1889.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Austrian.....	113	77,292	99	65,319	.....	.....	14	11,973
Belgian.....	1,080	333,943	1,245	401,233	165	67,290	.....	.....
British.....	37,464	24,949,324	38,677	25,945,414	1,213	996,090	.....	.....
Danish.....	2,782	766,412	2,982	854,993	200	88,580	.....	.....
Dutch.....	1,660	1,035,311	1,567	946,363	.....	.....	93	88,948
French.....	2,965	990,426	3,022	925,345	57	.....	.....	65,081
German.....	4,024	1,793,489	4,162	1,937,339	138	143,847	.....	.....
Italian.....	413	279,136	336	228,148	.....	.....	77	50,988
Norwegian.....	5,788	2,046,109	6,486	2,341,856	698	292,747	.....	.....
Russian.....	621	219,505	687	252,378	66	32,873	.....	.....
Spanish.....	589	503,466	654	588,929	65	85,463	.....	.....
Swedish.....	1,843	712,276	1,901	748,864	58	36,588	.....	.....
United States.....	104	130,130	101	168,132	.....	58,002	3	.....
Other countries.....	127	112,923	133	119,965	6	7,042	.....	.....
Total.....	59,573	33,952,742	62,052	35,524,275	*2,479	*1,571,533	.....	.....

CLEARED.

Austrian.....	121	80,005	94	60,477	.....	.....	27	19,528
Belgian.....	1,065	328,666	1,207	391,161	142	62,495	.....	.....
British.....	37,819	25,445,930	39,015	26,524,240	1,226	1,078,310	.....	.....
Danish.....	2,982	806,948	3,175	905,137	193	98,189	.....	.....
Dutch.....	1,697	1,051,908	1,566	973,933	.....	.....	131	77,975
French.....	2,927	986,720	3,037	942,224	110	.....	.....	44,499
German.....	4,012	1,813,561	4,267	2,018,979	255	205,418	.....	.....
Italian.....	434	296,765	330	228,002	.....	.....	104	68,763
Norwegian.....	5,779	2,047,534	6,615	2,395,355	836	347,821	.....	.....
Russian.....	607	215,875	718	260,741	111	44,866	.....	.....
Spanish.....	600	503,702	679	619,269	79	115,567	.....	.....
Swedish.....	1,838	720,355	1,923	742,817	85	22,462	.....	.....
United States.....	104	134,018	95	157,478	.....	23,460	9	.....
Other countries.....	174	134,413	169	145,807	.....	11,394	5	.....
Total.....	60,159	34,566,403	62,920	36,365,620	*2,761	*1,799,217	.....	.....

* Net Increase.

Table showing number and tonnage of British and foreign vessels (sailing and steam) entered and cleared at the principal ports in the United Kingdom.

ENTERED.

Port.	1888.		1889.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Belfast.....	297	195,399	319	227,058	22	31,659	.....	.....
Cardiff.....	3,878	2,928,265	3,872	2,912,896	.....	.....	6	15,369
Glasgow	933	994,311	975	1,058,228	42	63,917	.....	.....
Hull	3,176	1,897,868	3,266	2,008,205	90	110,337	.....	.....
Kirkcaldy.....	947	283,643	1,047	330,490	100	46,847	.....	.....
Leith.....	1,386	687,616	1,496	708,084	110	20,468	.....	.....
Liverpool.....	4,457	5,368,196	4,689	5,789,400	232	421,204	.....	.....
London.....	10,694	7,470,949	10,730	7,550,121	36	79,172	.....	.....
Newport.....	1,594	962,329	1,584	945,471	.....	.....	10	16,858
Southampton.....	1,794	867,737	1,870	924,255	76	56,518	.....	.....
Sunderland.....	1,509	743,443	1,639	791,119	130	47,676	.....	.....
Tyne ports.....	5,318	2,818,307	5,474	2,953,442	156	135,135	.....	.....
Other ports.....	23,590	8,734,679	25,091	9,325,506	1,501	590,827	.....	.....
Total.....	59,573	33,952,742	62,052	35,524,275	*2,479	*1,571,533	.....	.....

CLEARED.

Belfast.....	115	68,649	116	69,392	1	743	.....	.....
Cardiff.....	6,179	5,148,068	6,281	5,401,618	102	253,550	.....	.....
Glasgow	1,427	1,544,571	1,439	1,621,307	12	76,736	.....	.....
Hull	2,668	1,503,824	2,827	1,582,178	159	78,354	.....	.....
Kirkcaldy.....	1,717	605,100	1,977	697,885	260	92,785	.....	.....
Leith.....	1,024	512,988	1,156	557,587	132	44,599	.....	.....
Liverpool.....	4,002	4,941,556	4,064	5,147,028	62	205,472	.....	.....
London.....	7,919	5,470,912	8,129	5,566,620	110	95,708	.....	.....
Newport.....	2,186	1,469,403	2,072	1,422,712	.....	.....	14	46,691
Southampton.....	1,685	790,391	1,724	838,911	39	48,520	.....	.....
Sunderland.....	1,658	930,345	1,833	1,001,570	175	71,225	.....	.....
Tyne ports.....	7,601	4,392,727	7,970	4,786,939	369	394,212	.....	.....
Other ports.....	21,978	7,187,869	23,332	7,671,873	1,354	484,004	.....	.....
Total.....	60,159	34,566,403	62,920	36,365,620	*2,761	*1,799,217	.....	.....

* Net increase.

Table showing number and tonnage of registered vessels of the United Kingdom, Isle of Man, and Channel Islands which were employed in the home and foreign trade and the number of persons employed therein.

Description.	Number.	Tons.	Persons employed.		
			British.	Foreign.	Total.*
1889.					
Sailing vessels.....	11,969	2,976,346	75,282	12,370	87,765
Steam vessels.....	5,585	4,664,808	108,191	14,471	142,498
Total.....	17,554	7,641,154	183,473	26,841	230,263
1888.					
Sailing vessels.....	12,292	3,054,059	77,832	12,587	90,594
Steam vessels.....	5,292	4,297,829	102,137	12,690	133,079
Total.....	17,584	7,351,888	179,969	25,277	223,673
1887.					
Sailing vessels.....	12,694	3,114,430	68,278	13,053	81,442
Steam vessels.....	5,029	4,009,324	92,634	10,992	121,101
Total.....	17,723	7,123,754	160,912	24,046	202,543

* Including Lascars and Asiatics.

Table showing number and net tonnage of vessels built in the United Kingdom (exclusive of vessels built for foreigners).

[The figures are those of the ships finished building in the years mentioned.]

Description.	Iron.*		Steel.		Wood †		Total.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
1889.								
Sailing vessels.....	24	15,118	62	93,271	191	9,092	277	117,481
Steam vessels.....	113	35,386	445	518,074	23	553	1582	554,024
Total.....	137	50,504	507	611,345	214	9,645	1859	671,505
1888.								
Sailing vessels.....	55	20,999	38	45,614	176	9,083	269	75,696
Steam vessels.....	91	26,183	350	579,358	24	1,904	465	407,445
Total.....	146	47,182	388	624,972	200	10,987	734	483,141
1887.								
Sailing vessels.....	44	46,557	34	25,235	180	9,487	258	81,279
Steam vessels.....	76	18,910	227	205,907	19	623	322	225,440
Total.....	120	65,467	261	231,142	199	10,110	580	306,719

* Including vessels built partly of iron and partly of steel.

† Including composite vessels.

‡ Including a vessel built of delta metal.

Table showing number and net tonnage of iron, steel, and wooden sailing and steam vessels built at ports in the United Kingdom for foreigners in 1889, distinguishing whether built for war or mercantile purposes, with increase or decrease as compared with 1888.

Description.	1889.		1888.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
<i>War.</i>								
Steam.....	6	726	17	1,899			11	1,173
<i>Mercantile.</i>								
Sailing.....	17	19,666	37	20,697			20	1,031
Steam.....	204	162,832	93	58,210	111	94,622		
Total.....	221	182,498	130	88,907	91	93,591		
<i>Summary.</i>								
Sailing.....	17	19,666	37	20,697			20	1,031
Steam.....	210	163,558	110	70,109	100	93,449		
Total.....	227	183,224	147	90,806	80	82,418		

Table showing number and tonnage of vessels belonging to the United Kingdom totally lost (exclusive of vessels of the royal navy) and number of passengers and crew lost.

Description.	Vessels lost.		Persons lost.		
	No.	Tons.	Crew.	Passengers.	Total
<i>Sailing.</i>					
1887.....	364	98,202	772	271	1,043
1888.....	429	115,946	724	60	784
Increase.....	65	17,744			
Decrease.....			48	211	*259
<i>Steam.</i>					
1887.....	136	99,984	754	91	845
1888.....	115	73,502	379	721	1,100
Increase.....				630	*253
Decrease.....	21	26,472	375		
<i>Summary.</i>					
1887.....	500	198,196	1,526	362	1,888
1888.....	544	189,458	1,103	781	1,884
Increase.....	44			419	
Decrease.....		8,728	423		*4

* Average.

AGRICULTURE.

The cultivated area of Great Britain in 1890 shows an increase of 34,978 acres as compared with the previous year; but, following the course which has been going on for the last 18 years, the total acreage of arable land is 117,000 acres less, while the total acreage under permanent pasture has increased by 152,000 acres.

The changes in the crops produced in the last 20 years are shown in the following table:

Year.	Corn crops.	Green crops.	Clover and grasses under rotation.	Other crops.	Bare fallow.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
1870.....	9,548,000	3,587,000	4,505,000	85,000	611,000
1880.....	8,876,000	3,477,000	4,434,000	76,000	813,000
1890.....	8,033,000	3,298,000	4,809,000	103,000	508,000

Table showing the acreage of the United Kingdom, with the increase or decrease in 1890 as compared with 1889.

Acreage.	1890.	1889.	Increase.	Decrease.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Total acreage of United Kingdom.....	77,799,793	77,799,793	.....	.....
Permanent pasture.....	27,115,425	26,816,092	299,333	.....
Arable land.....	20,930,330	21,115,073	.....	184,743
Cultivated area.....	48,045,755	47,931,165	*114,590	.....
Corn crops.....	9,574,249	9,637,354	.....	63,105
Green crops.....	4,534,145	4,541,760	.....	7,615
Clover, etc., under rotation.....	6,097,210	6,188,502	.....	91,292
Flax.....	99,326	116,192	.....	16,866
Hops.....	54,555	57,749	.....	3,194
Small fruit.....	46,733	42,506	4,227	.....
Bare fallow.....	524,112	531,010	.....	6,898

* Average increase.

The record of live stock in Great Britain in 1890 is the most satisfactory presented in many years. It shows an increase in all classes of animals, the increase in the number of horses being 19,252; cattle, 517,093; sheep, 2,182,421; and pigs, 456,175.

From a table prepared by the board of agriculture, it appears that the United States (with 52,800,000 head of cattle), Russia (with 24,600,000), Germany (with 15,800,000), and France (with 13,400,000) are the only countries wherein the totals exceed those of the herds of the United Kingdom. In sheep, Australasia (with flocks amounting to upwards of 101,000,000), Russia (with 44,500,000), and the United States (with 44,300,000) are the only countries possessing flocks greater than those of the United Kingdom.

The increase in the number of live stock in the last 20 years is shown in the following table:

Years.	Horses.	Cattle.	Sheep.	Pigs.
1870.....	1,267,000	5,403,000	28,398,000	2,171,000
1880.....	1,421,000	5,912,000	26,619,000	2,001,000
1890.....	1,433,000	6,509,000	27,272,000	2,774,000

Table showing the number of live stock in Great Britain in 1889 and 1890.

Description.	1890.	1889.	Increase.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>
Horses.....	1,964,911	1,945,386	19,525
Cattle.....	10,789,858	10,272,765	517,093
Sheep.....	31,667,195	29,484,774	2,182,421
Pigs.....	4,362,040	3,905,865	456,175

The number of horses imported into the United Kingdom in 1889 was 13,800, of the average value of \$100, while the number of horses exported was 14,800, of the average value of \$345.

The average value of animals imported from the United States was: Horses, \$282; oxen and bulls, \$95; cows, \$82; calves, \$16; and sheep, \$9.50.

Table showing the average value per head of horses, cattle, etc., imported into the United Kingdom from foreign countries and British possessions from 1870 to 1889, inclusive.

Years.	Horses.	Cattle.			Sheep (including lambs).	Pigs.
		Oxen and bulls.	Cows.	Calves.		
1870.....	\$148.97	\$87.57	\$76.42	\$20.51	\$8.35	\$18.12
1875.....	185.30	104.68	91.48	23.17	10.78	17.18
1880.....	122.79	107.28	88.95	23.09	11.70	16.98
1885.....	73.09	102.88	94.14	22.18	10.52	18.60
1889.....	97.58	89.58	59.02	18.64	8.57	18.30

Table showing the average value per head of horses, cattle, etc., imported into the United Kingdom from each foreign country and British possession in 1889.

Whence imported.	Horses.	Cattle.			Sheep (including lambs).	Pigs.
		Oxen and bulls.	Cows.	Calves.		
Argentine Republic.....	\$116.79				\$9.73	
Belgium.....	222.52					
Canada.....	228.57	\$83.33	\$85.57	\$8.41	9.66	
Channel Islands.....	88.20	143.53	96.13	18.66		
Denmark.....	38.84	58.17	54.81	17.59	7.15	\$19.48
Falkland Islands.....					7.78	
France.....	314.69					
Germany.....	54.40				8.03	
Holland.....	178.04	77.75	75.67	19.91	10.36	9.24
Norway.....	66.83	47.05	45.51		6.32	
Portugal.....		97.18				
Spain.....	13.95	80.11				
Sweden.....	125.13	58.47	54.62	23.11	7.33	14.71
United States.....	282.63	95.85	82.16	16.35	9.42	
Average.....	97.58	89.58	59.02	18.64	8.57	18.30

As an indication of the increased consumption of meat in this country, it is interesting to notice that the number of live cattle imported in 1889 was larger than ever before, reaching 555,000 head. Of this total 68 per cent., or 379,012, came from the United States and Canada. The importations of fresh beef have also been larger than ever before, amounting to 1,386,000 cwts., equivalent to nearly 250,000 bullocks.

The following table shows the quantities of meat, grain, and meal and flour imported in 1879 and 1889:

Whence imported.	Dead meat.		Grain.		Meal and flour.	
	1879.	1889.	1879.	1889.	1879.	1889.
	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>	<i>Cwts.</i>
Australasia.....	94,456	777,495	2,247,605	1,507,132	37,638	33,263
Argentine Republic.....	4,272	414,796	225,574	1,732,245	9,884	742
Austrian territories.....			22,118	784,957	1,513,092	1,841,022
Canada.....	75,869	376,476	8,638,621	4,613,904	457,174	1,167,622
Chile.....			1,466,747	870,004	68,518	
Denmark.....	43,767	661,133	2,941,227	624,484	397,050	57,630
Egypt.....			3,969,430	1,579,100	6,417	1,250
France.....	10,213	15,324	736,283	880,034	355,006	90,613
Germany.....	349,759	159,056	7,983,577	4,546,518	915,133	1,153,859
Holland.....	89,255	249,989	268,094	326,533		
India (British).....	17	3	889,656	9,357,620	2,020	10
Italy.....	546	97	45,123	84,781		
Morocco.....			3,000	2,043,364		
Roumania.....			4,665,989	11,091,827		9,870
Russia.....	1,401	6,901	18,243,158	46,946,257	90,316	236,105
Sweden.....	355	72,949	5,009,561	1,646,043		
Turkey.....			275,035	3,468,609		3,435
United States.....	6,183,597	5,575,591	67,193,799	40,503,461	6,862,179	10,043,720
All other countries.....	38,731	158,843	492,724	1,528,219	13,825	32,941
Total.....	6,892,238	8,466,653	125,316,821	134,135,094	10,728,252	14,672,082

Table showing the estimated total produce and average yield per acre of each of the principal crops in the United Kingdom in 1887, 1888, and 1889.

Description.	Estimated total produce.			Estimated average yield per acre.		
	1887.	1888.	1889.	1887.	1888.	1889.
Corn crops:						
Wheat.....bushels...	76,224,940	74,493,133	75,883,611	31.97	27.97	29.89
Barley.....do.....	69,948,266	74,545,549	74,703,755	31.12	33.03	32.37
Oats.....do.....	150,789,416	157,975,675	164,078,736	34.25	37.95	39.75
Beans.....do.....	8,473,007	9,844,474	9,374,942	22.47	28.61	28.87
Peas.....do.....	5,623,226	5,862,099	5,921,107	24.43	24.20	26.27
Green crops:						
Potatoes.....tons...	7,134,296	5,582,331	6,435,387	5.26	4	4.71
Turnips and swedes.do.....	22,466,877	28,001,632	32,007,085	9.89	12.51	14.43
Mangolds.....do.....	5,278,328	6,229,022	6,740,278	14.61	16.78	18.21
Other crops:						
Hay.....do.....	11,492,716	15,132,585	16,284,879	1.27	1.63	1.69
Hops.....cwt.....	457,515	281,291	497,811	7.18	4.81	8.60

Table showing the average gasette prices per imperial quarter (8.25212 United States bushels) of wheat, barley, and oats in England and Wales from 1879 to 1889, inclusive.

Year.	Wheat.	Barley.	Oats.
1879.....	\$10.66	\$8.27	\$5.28
1880.....	10.77	8.04	5.61
1881.....	11.03	7.76	5.28
1882.....	10.97	7.58	5.30
1883.....	10.11	7.74	5.20
1884.....	8.69	7.45	4.92
1885.....	7.98	7.33	5.00
1886.....	7.56	6.46	4.62
1887.....	7.90	6.16	3.95
1888.....	7.76	6.77	4.07
1889.....	7.25	6.28	4.32

FISHERIES.

The quantity of fish landed on the coasts of the United Kingdom in 1889 was 12,678,000 cwts. (exclusive of shellfish), of the value of \$28,041,405, against 11,507,253 cwts., of the value of \$27,355,590, in the previous year. The value of shellfish landed was \$1,928,005, making the total value of all fish landed \$29,969,405, or an increase of about \$900,000 in the year.

The largest quantities of fish taken were: Cod, 850,450 cwts.; haddock, 2,379,552 cwts.; mackerel, 777,515 cwts.; herrings, 5,591,517 cwts.; lobsters and crabs, about 10,000,000; and oysters, 38,000,000.

Prime fish, such as turbot and soles, have increased in value, compared with the previous year, by about \$4.32 per cwt., and salmon, \$3.90 per cwt. Other fish have remained stationary in price or decreased in value, mackerel having decreased as much as 36 cents per cwt.

Table showing the average price of fish in the United Kingdom.

Description.	Price.	Description.	Price.
Turbot.....per cwt...	\$16.77	Mackerel.....per cwt...	\$2.48
Soles.....do.....	25.16	Herring.....do.....	1.07
Salmon.....do.....	32.25	Sprats.....do.....	.64
Cod.....do.....	2.31	Lobsters.....per 100...	19.19
Ling.....do.....	2.45	Crabs.....do.....	4.19
Haddock.....do.....	2.06	Oysters.....do.....	1.40

Table showing the quantity and value of fish landed on the coasts of the United Kingdom in 1888 and 1889.

Division.	Fish (excluding shellfish).			
	Quantity.		Value.	
	1888.	1889.	1888.	1889.
	<i>Cwts.</i>	<i>Cwts.</i>		
England and Wales.....	6,348,072	6,464,564	\$19,740,065	\$19,311,945
Scotland.....	4,756,936	5,416,312	6,697,885	7,153,155
Ireland.....	402,245	797,520	917,640	1,596,300
Total.....	11,537,253	12,678,096	27,355,590	28,061,400

Division.	Shellfish.		Total value.	
	1888.	1889.	1888.	1889.
England and Wales.....	\$1,324,720	\$1,532,705	\$21,064,785	\$20,844,650
Scotland.....	358,645	314,735	7,056,530	7,467,890
Ireland.....	38,290	80,565	955,930	1,656,865
Total.....	1,721,655	1,928,005	29,077,245	29,969,405

Table showing the quantity and value of fish taken in the United Kingdom in 1888.

Description.	England and Wales.		Scotland.	
	Quantity.	Value.	Quantity.	Value.
	<i>Cwts.</i>		<i>Cwts.</i>	
Prime fish.....	163,701	\$3,695,170	21,195	\$213,630
Other fish.....	6,296,363	15,471,625	5,394,817	6,939,525
Salmon (about).....	4,500	145,150		1,200,000
Shell fish.....		1,532,705		314,735
Total.....	6,464,564	20,844,650	5,416,012	8,667,890

Description.	Ireland.		Total.	
	Quantity.	Value.	Quantity.	Value.
	<i>Cwts.</i>		<i>Cwts.</i>	
Prime fish.....	6,305	\$109,945	191,201	\$4,018,745
Other fish.....	791,225	1,466,355	12,482,395	23,877,505
Salmon (about).....		1,670,000		3,015,150
Shell fish.....		80,565		1,928,005
Total.....	797,520	3,226,865	12,678,096	32,839,405

Table showing the number of boats and men and boys employed in sea fisheries in the United Kingdom.

Division.	Boats.	Men and boys.
England	8,271	43,473
Scotland	11,919	49,844
Ireland	6,662	24,189
Isle of Man	377	2,508
Channel Islands	234	1,402
Total	27,463	121,416
Total for 1888	27,812	122,526
Decrease compared with 1888	349	1,110

MINES.

The total number of persons employed in and about all the mines in the United Kingdom in 1889 was 625,229, of whom 5,777 were females, an increase of 32,573 persons employed compared with 1888.

The number of fatal accidents was 912 and the number of deaths 1,128, against 885 accidents and 960 deaths in the previous year. The ratio of persons employed was 1 in every 538; the ratio last year was 1 in every 603.

The total quantity of mineral wrought was about 192,994,743 tons, of which 176,916,724 tons were coal, 8,270,542 tons ironstone, and 2,853,463 tons iron ore.

There were 6,981,505 tons more coal raised in 1889 than in the previous year, and the average price per ton was \$1.53, compared with \$1.26 in 1888.

The amount of pig-iron produced was 8,322,824 tons, against 7,998,969 tons in 1888, and the average price per ton advanced from \$9.25 to \$12.25.

The amount of iron produced was 8,912 tons, against 9,241 tons in the previous year, and the price fell from \$586 per ton to \$483.

Zinc shows a decreased production of 610 tons, but the price increased from \$95 per ton to \$102.

The following tables give the number of persons employed, fatal accidents, minerals raised, etc. :

Persons employed in and about all mines in the United Kingdom in 1888 and 1889.

Description.	1888.	1889.
Persons employed underground (males)	465,006	489,179
Persons employed above ground :		
Males	108,054	112,513
Females	5,357	5,463
Persons employed on branch railways :		
Males	13,916	17,760
Females	323	314
Total	592,656	625,229

Number of persons employed, with number of fatal accidents and deaths, in all mines in the United Kingdom from 1874 to 1889, inclusive.

Year.	Persons employed.				Number of separate fatal accidents.
	Under-ground (males).	Above ground.		Total.	
		Males.	Females.		
1874-'83 (average).....	436,737	112,727	8,186	557,650	938
1884.....	448,847	109,403	6,246	564,496	917
1885.....	449,093	106,607	5,976	561,676	866
1886.....	448,657	106,867	5,568	561,092	869
1887.....	453,653	108,648	5,725	568,026	881
1888.....	465,006	108,054	5,357	578,417	885
1889.....	489,179	112,513	5,463	607,155	912

Year.	Number of deaths caused by the accidents.	Persons employed.		Death rate from accidents per 1,000 persons employ d
		Per fatal accident.	Per life lost.	
1874-'83 (average).....	1,217	594	458	2.182
1884.....	998	615	565	1.772
1885.....	1,214	648	462	2.164
1886.....	1,018	645	551	1.814
1887.....	1,051	644	540	1.85
1888.....	960	653	603	1.66
1889.....	1,128	666	538	1.856

Quantity of mineral wrought at mines in the United Kingdom in 1888 and 1889.

Minerals.	1888.	1889.
	Tons.	Tons.
Coal.....	169,935,219	176,916,724
Fire clay.....	1,879,273	2,192,346
Ironstone.....	8,635,032	8,270,542
Oil shale.....	2,076,504	2,014,860
Clays.....		82,443
Iron ore.....		2,853,436
Gypsum.....		92,727
Lead ore.....		48,431
Tin ore.....		12,464
Zinc ore.....		22,986
Other minerals (about).....		487,784
Total.....		192,994,743

Quantity and value of coal and metals produced in the United Kingdom in 1888 and 1889.

Description.	Quantity.		Value.	
	1889.	1888.	1889.	1888.
Coal.....tons...	176,916,724	169,935,219	\$280,877,130	\$214,856,380
Metals produced from British ores :				
Pig-iron.....do.....	8,322,824	7,998,969	101,954,590	73,990,460
Fine copper.....do.....	905	1,456	249,740	579,245
Metallic lead.....do.....	35,604	37,578	2,321,710	2,614,020
White tin.....do.....	8,912	9,241	4,301,710	5,418,500
Zinc.....do.....	9,392	10,002	960,725	957,275
Silver from lead.....ounces...	306,149	321,425	272,265	287,105
Other metals.....			151,850	180,000
Total.....			391,089,720	298,882,985

POST-OFFICE.

The estimated number of letters, postal cards, etc., delivered in the United Kingdom in the year ended March 31, 1890, was 2,511,253,000, an increase of 6.3 per cent. when compared with the previous year. The average number to each person in the Kingdom was 66.2.

The following table gives the number of letters, etc., dealt with and the average number per head of the population for the year ended March 31, 1890:

Division.	Estimated population.	Letters.		Book packets, circulation, and samples.		Newspapers.	
		Number.	Per head of population.	Number.	Per head of population.	Number.	Per head of population.
England and Wales.....	29,113,783	1,413,100,000	48.5	381,300,000	13	126,600,000	4.3
Scotland.....	4,087,927	140,300,000	34.3	42,400,000	10.4	16,700,000	4.1
Ireland.....	4,717,429	96,800,000	20.5	22,000,000	4.7	16,000,000	3.4
Total.....	37,919,139	1,650,200,000	43.5	445,700,000	11.8	159,300,000	4.2

Division.	Postal cards.		Telegrams.		Parcels.	
	Number.	Per head of population.	Number.	Per head of population.	Number.	Per head of population.
England and Wales.....	184,400,000	6.3	52,436,779	1.8	35,369,047	1.2
Scotland.....	22,900,000	5.6	6,545,654	1.6	4,528,364	1.1
Ireland.....	9,800,000	2.1	3,420,966	0.7	2,955,159	0.6
Total.....	217,100,000	5.7	62,403,399	1.6	42,852,570	1.1

The number of letters dealt with at the returned letter office was 6,311,102. Of this number, 119,386 were reissued to corrected addresses, 5,539,551 were returned to senders, and 214,839 returned to foreign countries. About

28,790 letters were posted without any addresses, and of these 1,495 contained cash, bank notes, and checks of the value of over \$30,000.

It is expected that the mail service between England and Japan and China will come into operation in 1891.

Money orders.—The number of money orders issued in the United Kingdom was as follows:

Description.	Number.			Amount.		
	1889.	1888.	Increase or decrease.	1889.	1888.	Increase.
Inland.....	9,027,750	9,228,183	—200,443	\$116,667,085	\$114,788,245	\$1,878,840
Colonial.....	81,717	74,085	+ 7,632	1,531,720	1,342,035	189,685
Foreign.....	282,108	261,475	+ 20,651	3,463,155	3,217,195	245,960
Total.....	9,391,575	9,563,725	—172,150	121,661,960	119,347,475	2,314,485

The amount sent to the United States by money order was \$900,130, and received from the United States, \$5,301,300, out of a gross total received from all foreign countries of \$7,541,205.

The number of postal orders issued was 44,712,548, of the value of \$88,689,010, an increase, respectively, of 4,430,227 and \$8,628,615 as compared with the previous year.

Savings banks.—The following table shows the business done by the post-office savings banks for the last five years:

Year.	Number of post-office savings banks.	Deposits.			Interest credited to depositors.	Withdrawals.	
		Number.	Amount.	Average amount of each deposit.		Number.	Amount.
1885.....	8,106	6,474,484	\$75,173,470	\$11.60	\$5,460,560	2,280,062	\$66,013,710
1886.....	8,351	6,562,395	78,484,260	11.95	5,847,950	2,390,655	68,449,715
1887.....	8,720	6,916,327	82,679,660	11.95	6,220,370	2,496,294	73,401,395
1888.....	9,022	7,540,625	95,261,130	12.62	6,664,190	2,633,808	79,013,675
1889.....	9,353	8,101,120	99,071,540	12.22	7,215,930	2,757,848	84,071,340

Year.	Average amount of each withdrawal.	Charges of management.	Number of accounts opened.	Number of accounts closed.	Number of accounts remaining open at close of year.	Amount (inclusive of interest) standing to credit of all open accounts at close of year.	Average amount standing to credit of each open account at close of year.
1885.....	\$28.95	\$1,282,010	750,862	548,887	3,535,650	\$238,489,190	\$67.45
1886.....	28.62	1,452,775	758,270	562,499	3,731,421	254,376,690	68.16
1887.....	29.39	1,442,090	794,592	574,252	3,951,761	269,870,325	68.29
1888.....	30.00	1,634,950	887,460	618,294	4,220,927	292,781,970	69.35
1889.....	30.47	1,684,770	924,010	637,128	4,507,809	314,998,100	69.87

The total number of accounts open at the end of the year was distributed as follows:

Division.	Number.	Proportion to population.	Average balance due to each depositor.
England and Wales.....	4,162,529	1 to 7	\$69.85
Scotland.....	159,920	1 to 25	43.06
Ireland.....	185,360	1 to 25	93.72
Total.....	4,507,809	1 to 8	69.87

Telegraphs.—The number of telegrams sent during the year was 62,403,399, against 57,765,347 in the previous year.

The following table shows the total cost of the telegraph service in each of the last 5 years:

Year.	Receipts.	Expenditures.			Annual interest on capital.	Deficit.
		Telegraph vote.	Votes of other departments.	Total.		
1885-'86.....	\$8,936,320	\$8,665,520	\$496,485	\$9,162,005	\$1,632,085	\$1,857,770
1886-'87.....	9,435,800	9,698,820	464,340	10,163,160	1,632,085	2,359,445
1887-'88.....	9,964,745	9,641,725	353,440	9,995,165	1,632,085	1,662,505
1888-'89.....	10,649,825	9,846,620	360,185	10,206,805	1,768,935	1,325,915
1889-'90.....	11,819,180	10,907,360	404,190	11,311,550	1,496,080	988,450

Postal revenues and expenditures.

Receipts:

Postage on letters, parcels, etc.....	\$45,734,205
Commission on money orders.....	648,140
Commission on postal orders.....	977,025
Value of unclaimed money orders.....	14,500
Savings bank.....	1,865,020
Revenue from telegraphs.....	11,819,180
	61,058,070

Expenditures:

Postal service (including money-order and postal-order business).....	\$28,004,440
Packet service.....	3,326,875
Savings bank.....	1,684,770
Telegraph service.....	11,311,550
	44,327,635

Net revenue..... 16,730,435

The net revenue shows an increase of \$732,215 over the previous year.

RAILWAYS.

The working of the railways of the United Kingdom in 1889 was very satisfactory, inasmuch as more work was done and more money earned than in any previous year.

The increase in capital stock added was smaller than in any year since 1880, being only \$59,496,015, or 1.4 per cent. The total amount of ordinary capital was \$1,631,147,790, on which the rate of dividend was 4.66 per cent.; guarantied and preferred capital, \$1,637,233,135; rate of dividend, 4.12 per cent.; loans and debenture stock, \$1,114,594,905; dividend, 4.11 per cent.; or a dividend at the rate of 4.32 per cent. on the total capital.

The total receipts from traffic were \$385,125,085, an increase of \$20,651,760, or 5.7 per cent., compared with 1888, made up as follows: Passenger traffic, \$163,153,620, an increase of 5.3 per cent.; goods traffic, \$205,431,660, an increase of 6 per cent.; and miscellaneous receipts (which include rents, tolls, revenue from steamboats, and other items), \$16,539,800, or 4.9 per cent.

The total working expenditure was \$200,470,580, an increase of \$11,660,045, or 6.2 per cent., as compared with the previous year. This increase was principally due to increased cost of wages and materials, and was equal to about 1 cent per train mile.

The following table gives the train-mileage expenditure under the various headings of outlay for 1888 and 1889, with increase or decrease in 1889 as compared with 1888:

Description.	1889.	1888.	Increase.	Decrease.
	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>
Maintenance of way.....	10. 38	10. 20	0. 18	.....
Rolling stock.....	5. 96	6. 04	.....	0. 05
Locomotive power.....	16. 62	15. 75	0. 84	.....
Traffic expenses.....	19. 42	19. 36	0. 06	.....
General charges.....	2. 78	2. 84	.....	0. 06
Rates and taxes.....	3. 52	3. 56	.....	0. 04
Government duty.....	0. 54	0. 54	.....	.....
Compensations:				
Personal injuries.....	0. 40	0. 16	0. 24	.....
Damage to goods.....	0. 30	0. 28	0. 02	.....
Legal and parliamentary expenses.....	0. 42	0. 40	0. 02	.....
Miscellaneous.....	0. 78	0. 80	.....	0. 02
Total.....	61. 08	59. 94	*1. 14	.....

* Net increase.

The total quantity of minerals conveyed was 211,800,000 tons, and general merchandise, 85,700,000 tons, an increase, respectively, of 5.1 and 7 per cent. compared with the previous year. The receipts from carriage of minerals was \$85,255,000; general merchandise traffic, \$113,470,000; live stock, \$6,700,000; an increase on minerals and general merchandise of 5.5 and 6.8 per cent. respectively, but a decrease on live stock of 1.3 per cent.

The number of passengers conveyed was 775,183,000, against 742,499,000 in 1888, an increase of 4.4 per cent.

The mileage traveled by trains in 1888 and 1889 was as follows:

Year.	Passenger trains.	Goods trains.	Total, includ- ing mixed trains.
	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>
1889.....	161,100,000	139,000,000	303,100,000
1888.....	155,500,000	132,800,000	291,200,000
Increase.....	*5,600,000	†6,200,000	‡11,900,000
	*3.6 per cent.	†4.7 per cent.	‡4.1 per cent.

Summary of mileage, capital, traffic, receipts, and net earnings of railways in the United Kingdom in 1888 and 1889.

Description.	1888.	1889.	Increase in 1889.	
			Amount.	Percentage.
	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>	
Mileage.....	19,812	19,943	131	0.7
Double or more mileage.....	10,772	10,853	81	0.8
Capital.....	\$4,323,479,815	\$4,382,975,830	\$59,496,015	1.4
Capital per mile open.....	218,225	219,775	1,550	0.7
Ordinary capital.....	1,611,692,230	1,631,147,790	19,455,560	1.2
Receipts:				
Passenger.....	154,920,450	163,153,620	8,233,170	5.3
Goods.....	193,778,900	205,431,660	11,652,760	6
Miscellaneous.....	15,773,975	16,539,800	765,825	4.9
Total.....	364,473,325	385,125,085	20,651,760	5.7
Working expenses.....	188,810,535	200,470,580	11,660,045	6.2
Net earnings.....	175,662,790	184,654,505	8,991,715	5.1
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	
Percentage of net earnings on capital...	4.06	4.21	0.15	3.7

Railway receipts in the United Kingdom for the years 1885-'89, inclusive.

Year.	Total traffic receipts.	Total railway working ex- penses.		Net receipts from railway working.	
		Amount.	Proportion to total traffic receipts.	Amount.	Proportion to total loan and share capital.
			<i>Per cent.</i>		<i>Per cent.</i>
1885.....	\$333,224,835	\$177,137,665	53.2	\$156,087,170	3.83
1886.....	333,076,885	175,552,360	52.7	157,524,525	3.80
1887.....	339,572,930	178,328,355	52.5	161,244,575	3.81
1888.....	348,699,350	181,836,440	52.1	166,862,910	3.86
1889.....	368,585,285	192,876,780	52.3	175,708,505	4.01

Receipts from passenger and goods traffic in the United Kingdom from 1885 to 1889, inclusive.

Year.	Passenger traffic.			Goods traffic.		
	Amount.	Increase or decrease.		Amount.	Increase or decrease.	
		Amount.	Percentage.		Amount.	Percentage.
1885.....	\$148,865,110	—\$1,287,140	—0.86	\$184,359,725	—\$3,993,235	—2.12
1886.....	151,224,690	+ 2,359,580	+1.59	181,852,195	— 2,507,530	—1.36
1887.....	152,866,435	+ 1,641,245	+1.09	186,706,495	+ 4,854,300	+2.67
1888.....	154,920,450	+ 2,054,015	+1.34	193,778,400	+ 7,072,405	+3.79
1889.....	163,153,620	+ 8,233,170	+5.31	205,431,665	+11,652,765	+6.01

Year.	Gross receipts.		
	Amount.	Increase or decrease.	
		Amount.	Percentage.
1885.....	\$333,224,835	—\$5,280,375	—1.56
1886.....	333,076,885	— 147,950	—0.04
1887.....	339,572,930	+ 6,496,045	+1.95
1888.....	348,699,350	+ 9,126,420	+2.69
1889.....	368,585,285	+19,885,935	+5.70

Number of persons killed and injured on railways in the the United Kingdom in the 6 months ended June 30, 1890.

Description.	Killed.	Injured.	Total for corresponding period in 1889.		Increase.		Decrease.*	
			Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
From accidents to trains, rolling stock, etc.....	6	121	81	523	.....	.....	75	402
By accidents from other causes..	44	378	32	337	12	41	.....	.....
Servants:								
From accidents to trains, rolling stock, etc.....	8	58	.....	59	8	.....	.....	1
By accidents from other causes..	209	1,327	199	1,229	10	98	.....	.....
Persons passing over railways at level crossings.....	37	16	31	16	6	.....	.....	.....
Trespassers (including suicides).....	150	56	166	47	.....	9	16	.....
Other persons.....	23	40	17	31	6	9	.....	.....
Total.....	477	1,996	526	1,242	42	157	91	403

* Net decrease—killed, 49; injured, 246.

The number of persons killed and injured on railways in the United Kingdom during the 6 months ended June 30, 1890, was 477 killed and 1,996 injured, against 526 killed and 2,242 injured in the corresponding period in 1889. In addition to these numbers, 22 persons were killed and

3,112 injured while engaged in business on the premises of the various railway companies, but in which the movement of vehicles used exclusively upon railways was not concerned.

Occupations of employes of railway companies killed or injured in 6 months ended June 30, 1890.

Occupation.	Killed.	Injured.
	Number.	Number.
Brakemen and goods guards.....	21	244
Capstan men.....	5	23
Chockers, chain boys, and slippers.....	2	32
Engine-cleaners.....	4	23
Engine-drivers.....	12	130
Firemen.....	9	156
Guards, passenger.....	3	55
Laborers.....	18	61
Permanent way men.....	42	47
Porters.....	21	225
Shunters.....	18	179
Signalmen.....	1	12
Others.....	61	198
Total.....	217	1,385

TRAMWAYS.

The number of miles of tramways open in the United Kingdom in 1889 was 945, an increase of 45 miles in the year. The gross receipts were \$14,901,120, and working expenditures, \$11,333,405, leaving net receipts \$3,567,715, an increase, when compared with 1888, respectively, of \$919,625, \$456,235, and \$463,390.

The following table shows the total length, etc., of tramways in the United Kingdom in 1889:

Division.	Length of line open.	Paid-up capital.	Number of passengers conveyed.	Gross receipts.	Working expenses.	Net receipts.
	<i>Miles.</i>					
England and Wales.....	758	\$55,526,660	3,9,580,965	\$11,875,160	\$9,159,230	\$2,715,930
Scotland.....	81	6,264,390	70,583,156	1,984,855	1,388,730	596,125
Ireland.....	110	5,993,765	27,432,147	1,041,105	785,445	255,660
Total.....	949	67,784,815	477,596,268	14,901,120	11,333,405	3,567,715

POPULATION.

The estimated population of the United Kingdom in the middle of 1889 was 37,823,249, an increase, compared with 1888, of 382,755. The population of the different divisions of the Kingdom was as follows: England and Wales, 29,015,613, an increase in the year of 386,809; Scotland, 4,077,070, an increase of 42,914; and Ireland, 4,730,566, a decrease of 46,968.

The marriage rate in 1889 for the Kingdom was 13.8 per 100, a higher rate than any since 1884. In England and Wales the rate was 14.7; Scot-

land, 12.9; Ireland, 9.1, as compared with 14.2, 12.5, and 8.4, respectively, in the previous year.

The births registered in England and Wales numbered 885,914; Scotland, 122,770; and Ireland, 107,841; or at the rate of 30.5, 30.1, and 22.8, respectively, per 1,000. This is the lowest birth rate recorded in the last 50 years.

The number of deaths registered was: England and Wales, 518,313; Scotland, 73,203; and Ireland, 82,908; or at the rate of 17.9, 18, and 17.5, respectively, per 1,000 of population. There were 113 deaths in the urban population to 100 in the rural population. The deaths from zymotic diseases numbered 69,776 in England and Wales, or in the proportion of 2,405 to 1,000,000. This rate, though considerably above the rate for 1888, was, with that exception, the lowest yet recorded. There were only 23 deaths from smallpox, less than one-tenth of the smallest number previously recorded. Chicken pox caused 83 deaths; measles, 14,732, a considerable increase; scarlet fever, 6,698, the smallest proportion (231 to 1,000,000) yet recorded; typhus, 137; fever, 413; diphtheria, 5,368, or 185 to 1,000,000, the same rate as in 1888, but, with this exception, larger than in any year since 1865; whooping cough, 12,225, or 421 per 1,000,000, as compared with 461, the average rate for the previous 10 years; enteric fever, 5,011; and diarrhea and dysentery, 18,434. Hydrophobia caused 30 deaths.

In constitutional diseases, the mortality from phthisis was at the same rate as in 1888, and, with this exception, at its minimum. The deaths ascribed to cancer numbered 18,654, or 643 to 1,000,000, showing a further increase upon the ever-growing rates previously recorded. In 1865 the rate was only 372 per 1,000,000, and, without any exception, has increased year by year to its present large proportions.

The deaths from violence were 17,497, or in the proportion of 603 to 1,000,000, and included 2,170 persons who committed suicide. Twelve men were executed during the year, while 172 persons were found to have been murdered, including 74 infants. The proportion of deaths from violence shows a continuous decline. The mean of the 10 years 1871-'80 was 736 per 1,000,000.

The names in the indexes of births, deaths, and marriages at Somerset House numbered, at the end of 1889, 79,386,263. The number of searches was 41,002; certificates issued, 30,491; and amount of fees received for searches, £29,420.

Table showing the strength of the army, navy, and merchant service in 1889.

Class.	Employed.	Deaths.*	Births.
Army.....	210,298	1,961	.....
Navy.....	†50,790	271	.....
Merchant service.....	230,263	3,018	.....
Passengers.....	.....	484	128

* The death rate per 1,000 in the army was 9.3, navy, 5.3, and merchant service, 13.1.

† Average force afloat.

Table showing the population, marriages, births, and deaths in the United Kingdom.

Division.	Estimated population.	Persons married.	Births.	Deaths.	Proportion per 1,000 of population of—		
					Persons married.	Births.	Deaths.
1888.							
England and Wales.....	28,608,804	409,642	879,868	510,971	14.2	30.6	17.8
Scotland.....	4,034,156	50,610	123,269	71,174	12.5	30.6	17.6
Ireland.....	4,777,134	40,120	109,557	85,892	8.4	22.9	18
Total.....	37,440,494	498,372	1,112,694	668,037	13.3	29.6	17.8
1889.							
England and Wales.....	30,015,613	427,730	855,914	518,313	14.7	30.5	17.9
Scotland.....	4,077,070	32,636	122,770	73,203	12.9	30.1	18
Ireland.....	4,730,566	43,042	107,841	82,908	9.1	22.8	17.5
Total.....	37,823,249	523,408	1,116,555	674,464	13.8	29.5	17.8

Table showing the population, etc., of islands in the British seas in 1889.

Islands.	Population.	Births.	Deaths.
Isle of Man.....	53,558	1,578	1,010
Jersey.....	52,445	1,415	1,039
Guernsey and adjacent islands.....	35,257	798	635
Total.....	141,260	3,791	2,687

Table showing the mortality in England and Wales in 1889.

Cause of death.	Total deaths in 1889.	Rate per 1,000,000.				
		1889.	1888.	1887.	1886.	1885.
Zymotic diseases.....	69,776	2,405	2,097	2,660	2,648	2,507
Parasitic diseases.....	707	25	25	29	35	30
Dietetic diseases.....	1,898	66	62	63	59	59
Constitutional diseases.....	91,667	3,158	3,111	3,166	3,330	3,276
Developmental diseases.....	44,099	1,520	1,543	1,555	1,618	1,598
Local diseases.....	267,243	9,212	9,479	9,720	9,915	9,908
Violence.....	17,497	603	611	642	626	625
Ill-defined and not specified causes.....	25,466	876	871	955	1,047	1,007
Total.....	518,353	17,865	17,799	18,790	19,278	19,010

Cause of death.	Rate per 1,000,000—Continued.				
	1884.	1883.	1882.	1881.	Mean, 1871-'80.
Zymotic diseases.....	3,094	2,639	3,088	2,660	3,724
Parasitic diseases.....	38	39	37	39	57
Dietetic diseases.....	58	66	68	66	63
Constitutional diseases.....	3,404	3,407	3,395	3,328	3,594
Developmental diseases.....	1,574	1,632	1,558	1,582	1,674
Local diseases.....	9,543	9,890	9,591	9,348	9,920
Violence.....	651	675	669	697	736
Ill-defined and not specified causes.....	1,149	1,188	1,154	1,160	1,610
Total.....	19,511	19,536	19,560	18,880	21,378

Table showing the number of persons married, births, and deaths per 1,000 of population in the United Kingdom and other European countries.

Countries.	1861 to 1880.*	1886.	1887.	1888.	1889.
Persons married:					
United Kingdom.....	15.1	13.1	13.3	13.3	13.8
England and Wales.....	16.4	14.1	14.2	14.2	14.7
Scotland.....	14.2	12.4	12.5	12.5	12.9
Ireland.....	9.8	8.4	8.7	8.4	9.1
Denmark.....	15.3	14.2	14	14.2	14.2
Norway.....	14.5	13	12.5	12.2	12.4
Sweden.....	13.4	12.8	12.5	11.8	.....
Austria.....	17.1	15.6	15.6	15.8	15
Hungary.....	19.2	19.1	17.9	18.5	.....
Switzerland.....	15.1	13.8	14.2	14.1	14.1
German Empire.....	17.4	15.8	15.6	15.7	16.1
Prussia.....	17.2	16.3	16	16.1	16.4
The Netherlands.....	16.2	13.9	14	13.8	13.9
Belgium.....	14.6	13.4	14.2	14.2	14.5
France.....	15.8	14.8	14.5	14.4	14.2
Italy.....	15.2	15.6	15.7	15.6	15
Births:					
United Kingdom.....	33.8	31.2	30.3	29.6	29.5
England and Wales.....	35.3	32.4	31.4	30.6	30.5
Scotland.....	24.9	32.4	31.2	30.6	30.1
Ireland.....	26.2	23.3	23.2	22.9	22.8
Denmark.....	31.4	32.6	32.9	31.7	31.3
Norway.....	30.8	30.9	30.8	30.8	29.7
Sweden.....	30.9	29.8	29.7	28.8	.....
Austria.....	38.9	38	38.2	37.9	37.9
Hungary.....	43.7	45.2	43.9	43.4	.....
Switzerland.....	30.6	27.8	27.9	27.7	27.6
German Empire.....	39.6	37.1	37	36.7	36.5
Prussia.....	38.6	37.7	37.7	37.5	37.2
The Netherlands.....	35.8	34.6	33.7	33.7	33.2
Belgium.....	31.8	29.6	29.4	29.1	29.5
France.....	25.9	23.9	23.5	23.1	23
Italy.....	37.1	36.4	38.3	36.6	37.3
Deaths:					
United Kingdom.....	21.2	19	18.7	17.8	17.8
England and Wales.....	21.9	19.3	18.8	17.8	17.9
Scotland.....	21.9	18.6	18.7	17.6	18
Ireland.....	17.5	17.9	18.3	18	17.5
Denmark.....	19.7	18.2	18.3	19.7	18.6
Norway.....	16.9	16.1	16	16.9	17.4
Sweden.....	19.2	16.6	16.1	16	.....
Austria.....	31.1	29.4	28.8	29.2	27.3
Hungary.....	36.1	31.4	33.3	31.7	.....
Switzerland.....	23.6	20.7	20.2	19.9	20.3
German Empire.....	26.9	26.2	24.2	23.8	23.8
Prussia.....	26.8	26.1	23.9	22.9	23.2
The Netherlands.....	24.7	21.8	19.7	20.4	20.1
Belgium.....	22.8	21.1	19.3	20.1	19.1
France.....	23.6	22.5	22	21.8	20.5
Italy.....	30	28.3	27.5	26.8	24.9

* Average.

Table showing the condition of the primary schools in the United Kingdom.

Division.	Year ended.	Number of schools inspected.	Number of children who can be accommodated.	Average number of children in attendance.	Number of children present at inspection.
England and Wales.....	Aug. 31, 1889	19,310	5,440,441	3,682,625	4,307,979
Scotland.....	Sept. 30, 1889	3,116	706,085	503,100	572,561
Ireland.....	.....do.....	8,251	1,053,399	507,865	553,681
Total.....		30,677	7,199,925	4,693,590	5,434,221

The amount of Parliamentary grants for primary schools in England and Scotland was \$21,296,040; for Ireland, \$4,513,495; total, \$25,811,535.

Table showing the number of paupers (exclusive of vagrants) in the United Kingdom.

Division.	Able-bodied adults.			All other paupers.		
	Indoor.	Outdoor.	Total.	Indoor.	Outdoor.	Total.
England and Wales (January 1, 1890).....	25,917	71,828	97,745	169,131	520,669	689,800
Ireland (close of first week in January, 1890)	6,817	.....	.....	38,744	.....	.....

Division.	Total.		
	Indoor.	Outdoor.	Total.
England and Wales (January 1, 1890).....	195,048	592,497	787,545
Scotland (May 14, 1889).....	.....	.....	94,836
Ireland (close of first week in January, 1890).....	45,561	62,213	107,774
Total.....	.....	.....	990,155

The total amount spent in actual relief of poor was: England and Wales, \$41,832,385; Scotland, \$4,414,180; Ireland, \$5,106,800.

Table showing the number of criminal offenders committed for trial, convicted, and acquitted in the United Kingdom in 1889.

Division.	Committed for trial.			Convicted.	Acquitted.
	Males.	Females.	Total.		
England and Wales.....	10,192	1,907	12,099	9,348	2,709
Scotland.....	1,822	412	2,234	1,723	484
Ireland.....	1,801	380	2,181	1,225	889
Total.....	13,815	2,699	16,514	12,296	4,072
Total for 1888.....	15,500	2,790	18,290	13,634	4,531

EMIGRATION.

The total number of emigrants in 1889 was 342,641, British and Irish emigrants numbering 253,795 and foreigners 88,846, a decrease, when compared with the previous year, of 26,133 and 29,720, respectively. Immigrants

numbered 147,398, British and Irish numbering 103,070 and foreigners 44,328, an increase of 8,937 and 9,582, respectively. Thus the net emigration showed a decrease, when compared with 1888, of 35,070 emigrants of British and Irish origin and of 39,302 of foreign origin, or, together, a total of 74,372.

Of the net emigration, 97,379 persons of British and Irish origin went to the United States, against 131,955 in 1888.

The following tables show the total emigration and immigration, occupation of emigrants, etc., in 1889:

Number of persons leaving the United Kingdom for places out of Europe.

Nationality.	To United States.	To British North America.	To Australasia.	To Cape of Good Hope and Natal.	To all other places.	Total.	Total for 1888.
English.....	93,307	22,417	23,103	12,775	11,916	163,518	170,822
Scotch.....	17,567	3,649	2,374	979	785	25,354	35,873
Irish.....	57,897	2,203	2,817	130	1,876	64,923	73,233
Total.....	168,771	28,269	28,294	13,884	14,577	253,795	279,928
Foreigners.....	69,792	9,787	540	1,758	1,589	83,466	113,230
Not distinguished.....	1,832			29	3,519	5,380	5,336
Grand total.....	240,395	38,056	28,834	15,671	19,685	342,641	398,494

Number of persons arriving in the United Kingdom from places out of Europe.

Nationality.	From United States	From British North America.	From Australasia.	From Cape of Good Hope and Natal.	From all other places.	Total.	Total for 1888.
British and Irish.....	71,392	8,642	10,438	4,869	7,729	103,070	94,133
Foreigners.....	40,301	385	199	836	1,401	43,122	33,895
Not distinguished.....					1,206	1,206	851
Total.....	111,693	9,027	10,637	5,705	10,336	147,398	128,879

Net emigration.

Country.	Total emigration and immigration.			Emigration and immigration of persons of British and Irish origin.		
	Emigrants.	Immigrants.	Excess of emigrants.	Emigrants.	Immigrants.	Excess of emigrants.
United States.....	240,395	111,693	128,702	168,771	71,392	97,379
British North America.....	38,056	9,027	29,029	28,269	8,642	19,627
Australasia.....	28,834	10,637	18,197	28,294	10,438	17,856
Cape of Good Hope and Natal	15,671	5,705	9,966	13,884	4,869	9,015
All other places.....	19,685	10,336	9,349	14,577	7,729	6,848
Total.....	342,641	147,398	195,243	253,795	103,070	150,725

Occupations of adult passengers leaving the United Kingdom for the United States.

Occupation.	British and Irish.	Foreigners.	Total.
Males :			
Agricultural laborers, etc.....	12,121	258	12,379
Bakers.....	248	68	316
Blacksmiths and farriers.....	127	4	131
Boot and shoe makers.....	142	61	203
Bricklayers, masons, etc.....	1,342	203	1,545
Butchers, etc.....	255	49	304
Carpenters and joiners.....	1,156	140	1,296
Clerks and agents.....	1,756	79	1,835
Clock and watch makers.....	57	14	71
Domestic servants.....	354	33	391
Engine-drivers.....	79	1	80
Engineers.....	444	165	609
Farmers and graziers.....	3,267	1,408	4,675
Gentlemen, professional men, merchants.....	4,970	1,459	6,429
Laborers, general.....	28,744	21,096	49,840
Mechanics.....	6,735	6,479	13,214
Millers, etc.....	61	79	141
Miners and quarrymen.....	1,500	758	2,258
Painters, etc.....	659	402	1,061
Printers.....	164	7	171
Railway servants.....	34	1	35
Seamen.....	271	60	331
Shopkeepers, etc.....	860	567	1,427
Smiths, general.....	119	130	249
Spinners and weavers.....	438	20	458
Tailors.....	381	250	631
Other trades and professions.....	1,022	69	1,091
Occupation not stated.....	16,953	4,335	21,288
Females :			
Domestic and farm servants, nurses, etc.....	18,195	4,628	22,823
Milliners, etc.....	914	58	972
Spinners and weavers.....	506	3	509
Other trades and professions.....	314	81	395
Occupation not stated.....	40,524	17,330	57,854
Total.....	144,313	60,295	204,608

STRIKES.

The total number of strikes in 1889 was 1,145, of which number 223 occurred in the textile trades, 111 in coal-mining, 107 in shipbuilding, 97 in engineering, 86 in dock and wharf laborers, and 43 in seamen and firemen trades. These six groups have thus furnished 60 per cent. of the total strikes.

The large number of strikes was undoubtedly due to the revival in trade, which commenced in 1887 and has continued without check to the present time. The demand for men in some trades has been very great; in some cases, even, the supply has been unequal to the demand, notably so in the shipbuilding and iron and steel trades and dependent industries. In the shipbuilding and boiler-making trades, for instance, the unemployed statistics of the society representing the trade show that, whereas in 1884 the monthly average of members out of work was $23\frac{3}{4}$ per cent.; in 1885, $26\frac{3}{4}$

per cent. ; and in 1886, 28 per cent. ; in 1887 the average fell to $21\frac{1}{2}$ per cent. ; in 1888, to $7\frac{3}{4}$ per cent. ; in 1889, to $2\frac{1}{3}$ per cent. ; and in March, 1890, to 0.85 per cent.

The following table gives the proportion of unemployed workmen at different times, as shown by the monthly reports of some of the chief trades unions :

Month.	1887.	1888.	1889.	1890.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
January.....	9.9	6.8	3.3	1.75
February.....	10.3	7.8	2.1	1.44
March.....	8.5	7	2.8	1.4
April.....	7.7	5.7	2.2	1.7
May.....	6.8	5.2	2	1.96
June.....	8.5	4.8	2	1.88
July.....	8	4.6	1.8	2.28
August.....	8.5	3.9	2.5	.....
September.....	8.3	4.8	2.1	.....
October.....	7.5	4.4	1.7	.....
November.....	8.6	4.4	1.8	.....
December.....	8.5	3.1	1.5	.....

The principal strikes in London were those of the dock-laborers and gas-workers. The dock-laborers' strike was specially reported on by me at the time, but it may be interesting to recall one or two of the chief points in connection with it. The dock-laborers were composed of about 100,000 men, totally unorganized, earning from 8 to 10 cents per hour when employed, their earnings throughout the year averaging about \$1.75 per week. That a great deal of discontent should exist among these men was only what was to be expected, and this discontent was brought to a head in August, 1889, when, certain leaders having arisen, a strike was ordered, the principal demand being for 12 cents per hour, with a minimum payment of 50 cents. Public sympathy was with the men on strike, and the total subscribed to the strike fund was \$243,680, of which amount \$58,660 was subscribed by the public, \$21,170 by various labor societies, the remainder, and by far the largest amount, coming from the Australian labor societies. The strike, which lasted for 5 weeks, was entirely successful.

Attention may here be drawn to one of the results of the dock strikes in London and elsewhere.

To protect themselves from the action of the dock-laborers, stokers, and firemen, and affiliated trades unions, the shipowners of the United Kingdom have formed an alliance under the title of the Shipping Federation, the object being to help one another in case they are attacked by the before-mentioned unions. "This federation is becoming more powerful every day, and a few months ago, when there was a good deal of irritation among the dock-laborers at Liverpool and elsewhere, it was said that the whole of the firms federated were prepared to lay up their ships for the winter rather than submit to the inconveniences put upon them by the action of the dock-laborers

and others. Matters have, however, since become quieter, and the adoption of a system of coöperation at the London docks—which has, so far, met with success, and which will, no doubt, be gradually extended to other places—points to a continuance of quiet times, at any rate for the present.

The South Metropolitan Gas strike, which arose through a dispute between the gas company and the gas-stokers' union, and which at one time threatened to become very serious through the partial stoppage of the supply of gas in the south of London, ended in the defeat of the gas-stokers, the company being able to obtain more men than were required to fill the places of the strikers, principally from the agricultural districts; but the total loss to the company through the strike was estimated at \$375,000.

In this regard, I may mention that the gas-stokers' strikes in London, Manchester, and other places have led largely to the introduction of labor-saving machinery into the gas works of this country, the systems in use in some of the largest works in the United States being adopted; but, in spite of this, I was informed recently that the amount of wages paid by one of the largest London gas companies had increased by \$1,500,000 annually, which, added to an increase in the price of coal of \$1.75 per ton, has caused them to advance their price for gas this winter.

The principal object of strikes in 1889 was for advances in wages. There were in all 619 strikes with this object, or rather more than half of the total strikes, of which number 299 were successful, 195 partly successful, 66 unsuccessful, and 59 in which the results were not known. Of the total number of strikes, 62.3 per cent. were settled by conciliation.

In 930 cases, in which 344,840 persons were on strike, it is estimated that \$5,612,500 were lost in wages alone.

The following table gives the causes or objects of strikes in 1889, and whether successful or unsuccessful:

Cause or object.	Total number.	Number successful.	Number partially successful.	Number unsuccessful.	Result not known.
For advance in wages.....	619	299	195	66	59
For advance in wages and other concessions.....	149	43	95	10	1
Against reduction in wages.....	45	12	8	20	5
Disputes as to wages.....	36	20	10	4	2
Dissatisfaction with conditions of work, hours, etc.....	137	62	31	42	4
Against alteration in conditions of working.....	41	16	9	15	1
Disputes between classes of work people as to prices, etc.....	18	9	4	3	2
For introduction of union rules.....	29	5	2	17	5
Defense of, or objection to, fellow-workmen.....	29	7	6	12	4
Dissatisfaction with superior officials.....	12	3	1	8	.....
In defense of superior officials.....	3	.....	.....	3	.....
Sympathy with, or intimidation in consequence of, prevailing strikes.....	20	.....	7	5	8
Cause not known.....	5	.....	.....	2	3
Total.....	1,145	476	368	207	94

BANKRUPTCY.

The total number of cases of bankruptcy, etc., in 1889 was 7,857, with liabilities amounting to \$55,511,200, a decrease, as compared with the previous year, of 464 cases and in liabilities of \$4,060,945. The amount of assets was \$23,544,405, an increase of \$246,893, leaving the estimated loss to creditors at \$39,665,020, or \$4,102,120 less than in 1888.

The percentage of cases under the value of \$250 dealt with by the bankruptcy court was 53.41.

The trades and occupations in which the greatest number of failures have occurred were: Grocers, etc., 335; publicans and hotel-keepers, 273; farmers, 247; builders, 239; boot and shoe manufacturers and dealers, 147; bakers, 127; drapers, haberdashers, etc., 117; tailors, etc., 96; agents, 86; decorators, painters, etc., 85. These trades furnished about 41 per cent. of the total failures in 1888 and 1889.

The following tables show the total amount of insolvency, average per estate realized, estimated loss to creditors, etc., for a series of years:

Amount of insolvency for 1888 and 1889.

Year.	Number of cases.	Liabilities.	Assets.	Estimated loss to creditors.
1888.....	8,321	\$59,572,145	\$23,297,510	\$43,767,140
1889.....	7,857	55,511,200	23,544,405	39,665,020
Increase.....			246,893	
Decrease.....	464	4,060,945		4,102,120

Number of bankruptcies, etc., with amount of liabilities and assets in each year from 1885 to 1889.

Year.	Number of cases.				Liabilities.			
	Bankruptcies.	Liquidations.	Compositions.	Total.	Bankruptcies.	Liquidations.	Compositions.	Total.
1885.....	3,965	78	290	4,333	\$37,484,060	\$3,737,855	\$3,967,030	\$45,188,945
1886.....	4,566	61	189	4,816	33,364,335	2,961,765	3,243,255	39,569,355
1887.....	4,681	31	127	4,839	40,643,970	2,280,195	1,754,960	44,679,125
1888.....	4,695	27	104	4,826	32,920,640	906,355	1,727,745	35,554,740
1889.....	4,415	30	75	4,520	27,407,045	3,116,040	1,118,380	31,641,465

Year.	Assets.				Percentage of total assets to total liabilities.
	Bankruptcies.	Liquidations.	Compositions.	Total.	
1885.....	\$12,078,090	\$1,918,020	\$1,469,645	\$15,465,755	34.2
1886.....	13,506,490	2,409,875	1,359,435	14,275,800	36.1
1887.....	11,838,340	855,385	642,185	13,335,810	29.8
1888.....	10,066,970	326,765	820,000	11,213,735	31.5
1889.....	8,103,170	1,367,900	449,730	9,920,800	31.4

Estimated annual loss to creditors through bankruptcy proceedings.

Description.	1885.	1886.	1887.	1888.	1889.
Assets :					
Liquidations.....	\$1,918,000	\$2,409,875	\$855,385	\$326,765	\$1,367,900
Bankruptcies	12,078,090	10,506,490	11,838,240	10,066,970	8,133,170
Total.....	13,996,110	12,916,365	12,693,625	10,393,735	9,501,070
Amount after deduction of one-third for expenses of realization.....	9,330,740	8,610,910	8,462,415	6,929,155	6,334,045
Compositions.....	1,469,645	1,359,435	642,185	820,000	449,730
Total assets for dividends.....	10,800,385	9,970,435	9,104,600	7,749,155	6,783,775
Liabilities	45,188,945	39,569,355	44,679,125	35,554,740	31,641,465
Net estimated loss to creditors.....	34,388,560	29,599,010	35,574,525	27,805,585	24,857,690

Average per estate realized and amount expended in costs of estates closed by bankruptcy court.

Year.	Number of estates closed.	Percentage of cases. under \$250.	Average amount per case real- ized.	Average costs per case.
1884.....	574	37.98	\$583.00	\$170.50
1885.....	1,593	48.4	484.50	153.50
1886.....	2,657	48.47	467.50	158.50
1887.....	3,618	51.32	450.50	160.50
1888.....	3,529	49.98	459.00	166.50
1889.....	3,814	53.41	433.00	160.50

Average amount per case of liabilities and assets in bankruptcy.

Description.	1885.	1886.	1887.	1888.	1889.
Bankruptcies :					
Average liabilities.....	\$9,455	\$7,305	\$8,685	\$7,010	\$6,205
Average value of estates.....	3,045	2,300	2,530	2,145	1,840
Liquidations or schemes of arrangement :					
Average liabilities.....	47,990	48,555	73,555	33,570	103,865
Average value of estates.....	24,590	39,505	27,595	12,100	45,595
Compositions :					
Average liabilities.....	13,680	17,160	13,820	16,615	14,910
Average value of estates.....	5,070	7,195	5,055	7,885	5,995

PATENTS.

The number of applications for patents in 1889 was 21,008, exceeding those of 1888 by nearly 10 per cent.

The number of applications from persons resident in the United Kingdom was 16,019, an increase of 1,168 when compared with 1888. The applications from foreign countries numbered 4,989, of which number 1,857 were from the United States. The number of applications from the United States in 1888 was 1,457.

The revenue of the patent office from all sources was \$864,100 and the expenses \$396,430, thus leaving a surplus of \$467,670.

No. 127—6.

The following table gives the total number of applications for patents, designs, and trade-marks in each year from 1884 to 1889:

Year.	Patents.	Designs.		Trade-marks.
		Single.	Sets.	
1884.....	17,110	19,515	238	7,104
1885.....	16,101	20,388	337	8,026
1886.....	17,176	23,717	324	10,677
1887.....	18,051	25,734	309	10,586
1888.....	19,103	25,923	316	13,315
1889.....	21,008	24,370	335	11,316

Under authority of the patents, designs, and trade-marks act, 1888, the board of trade have drawn up certain rules relating to the registration of patent agents, which provide that the registrar of the institute of patent agents shall keep a list of all patent agents permitted to practice as such. In order to obtain registration, a person must give proof that prior to the passing of the act he had been practicing as a patent agent, or otherwise he must pass an examination to be fixed by the institute of patent agents. No other person is now allowed to practice as a patent agent. The rules also provide for the striking off of any person's name who has been proved to have been guilty of any misdemeanor or disgraceful professional conduct. The fees payable for registration of name of patent agent are £5 5s. on registration and an annual fee of £3 3s., equal, respectively, to \$26.25 and \$15.75.

NATIONAL DEBT.

The total amount of the national debt at the close of the financial year ended March 31, 1890, was \$3,449,720,130, a reduction in the year of \$42,432,725. The permanent annual charge of the debt was reduced to \$125,000,000, of which sum \$121,498,165 were actually expended on the service of the debt and \$3,501,835 carried to the new sinking fund.

The total amount of the national debt for each financial year ended March 31 was:

Year.	Funded debt.	Capital value of terminable annuities.	Unfunded debt.	Total.
1886.....	\$3,194,248,470	\$429,149,585	\$88,014,000	\$3,711,412,055
1887.....	3,188,188,200	405,615,740	87,589,500	3,681,393,440
1888.....	3,048,703,715	392,246,150	86,925,500	3,527,875,365
1889.....	3,035,289,055	376,397,190	80,466,610	3,492,152,855
1890.....	2,929,799,260	358,659,345	161,261,525	3,449,720,130

REVENUE.

The gross revenue for the year ended March 31, 1890, amounted to \$446,521,580, and exceeded the gross expenditure by \$16,105,010.

The receipts from customs were \$102,120,000, an increase of \$2,421,860 as compared with the previous year. Excise showed an apparent decrease of \$6,705,855, but this was brought about by the transference of nearly \$15,000,000 to the local taxation account. The total applied to imperial purposes was \$120,666,160. Stamps showed an increase of \$4,003,690, the total amount being \$65,208,460.

The charges for collection of revenue amounted to \$54,790,480, a decrease of \$152,880 compared with 1889.

The following statement shows the public revenue and expenditure of the United Kingdom for the year ended March 31, 1890:

Debit.

National debt services.....	\$126,133,800
Civil list and civil administration.....	85,370,920
Army.....	86,804,560
Navy.....	69,211,205
Annuity under Indian army pension deficiency, etc.....	750,000
Naval defense fund.....	7,142,855
Expenditure under national debt conversion act and redemption act.....	212,750
Total	375,626,090
Charges for collection of revenue.....	54,790,480
Balance in hand March 31, 1890.....	16,105,010
Grand total.....	446,521,580

Credit.

Customs.....	102,120,000
Excise	120,800,000
Stamps (inland revenue).....	65,300,000
Land tax.....	5,175,000
House duty.....	9,825,000
Property and income tax.....	63,850,000
Post-office.....	47,250,000
Telegraph service.....	11,600,000
Crown lands.....	2,150,000
Interest on advances, etc.....	1,395,775
Fee and patent stamps.....	3,891,365
Receipts by civil departments.....	13,164,440
Total	446,521,580

Table showing the charges for the collection of the revenue in 1889 and 1890.

Revenue.	Year ended March 31—		Increase or decrease.
	1890.	1889.	
Customs.....	\$4,529,560	\$4,634,945	— \$105,385
Inland.....	8,744,895	8,956,665	— 211,770
Post-office.....	27,316,025	28,339,240	— 1,023,215
Telegraphs.....	10,880,000	9,825,000	+ 1,055,000
Packet service.....	3,320,000	3,187,510	+ 132,490
Total.....	54,790,480	54,943,360	— 152,880

Table showing the customs receipts for 1889 and 1890.

Articles	Year ended March 31—		Increase or decrease.
	1890.	1889.	
Tea.....	\$23,149,505	\$22,452,530	— \$696,975
Coffee.....	921,460	864,160	— 57,300
Spirits, foreign.....	21,483,170	23,406,125	+ 1,922,955
Wine.....	6,052,685	6,510,800	+ 458,115
Tobacco and snuff.....	44,293,905	45,309,920	+ 1,016,015
Currants, raisins, and dried fruits.....	2,897,145	2,674,155	— 222,990
Other articles.....	899,000	915,785	+ 16,785
Miscellaneous receipts.....	159,085	144,340	— 14,745
Total.....	99,855,955	102,277,815	+ 2,421,860

Table showing the excise receipts for 1889 and 1890.

Articles.	Year ended March 31—		Increase or decrease.
	1890.	1889.	
Spirits.....	\$69,300,010	\$64,395,765	+ \$4,904,245
Beer.....	47,052,130	43,851,475	+ 3,200,655
Licenses*.....	2,651,225	17,528,125	— 14,876,900
Railways.....	1,622,305	1,557,530	+ 64,775
Coffee mixture labels and chicory.....	19,710	18,670	+ 1,040
Other receipts.....	20,780	20,450	+ 330
Total.....	120,666,160	127,372,015	— 6,705,855

* The revenue arising from licenses for sale of alcoholic liquors is now applied to local taxation.

Table showing the stamp receipts for 1889 and 1890.

Description.	Year ended March 31—		Increase or decrease.
	1890.	1889.	
Deeds and other instruments.....	\$17,650,245	\$15,765,420	+ \$1,884,825
Probate duty.....	11,322,005	14,105,195	— 2,783,190
Estate duty.....	3,950,090	.....	+ 3,950,090
Legacies and successions.....	18,945,275	18,684,235	+ 261,040
Life insurances.....	227,285	226,140	+ 1,145
Marine insurances.....	706,850	646,015	+ 60,835
Bills of exchange, etc.....	4,338,430	4,117,400	+ 221,030
Receipts and drafts.....	5,396,450	5,206,235	+ 190,215
Other receipts.....	2,671,830	2,454,130	+ 217,700
Total.....	65,208,460	61,204,770	+ 4,003,690

Table showing the average minimum rate of discount charged by the Bank of England from 1886 to 1889, inclusive.

Months.	1886.	1887.	1888.	1889.
	Per cent.	Per cent.	Per cent.	Per cent.
January.....	3½	5	3½	4½
February.....	2½	4	2½	3
March.....	2	3½	2½	3
April.....	2	2½	2	2½
May.....	2½	2	2½	2½
June.....	2½	2	2½	2½
July.....	2½	2	2½	2½
August.....	2½	2½	2½	3
September.....	3½	4	3½	4½
October.....	3½	4	5	5
November.....	4	4	5	5
December.....	4½	4	5	5
Average.....	3	3½	3½	3½

Table showing the average price per £100 of the new 2½ per cent. consolidated stock in 1889 and 1890.

Months.	1888.	1889.
January.....		98½
February.....		99
March.....	100½	97½
April.....	100½	98½
May.....	99½	99
June.....	99½	98½
July.....	99½	98½
August.....	99½	98½
September.....	98	97
October.....	97½	97
November.....	97	97
December.....	96½	97½
Average.....		98

Table showing the amounts cleared at the London bankers' clearing house.

Years.	Amount cleared—			Total.
	On fortnightly stock exchange selling days.	On consols selling days.	On the 4th of each month.	
1885.....	\$4,675,000,000	\$1,245,000,000	\$1,110,000,000	\$27,555,000,000
1886.....	5,995,000,000	1,315,000,000	1,080,000,000	29,510,000,000
1887.....	5,730,000,000	1,485,000,000	1,280,000,000	30,385,000,000
1888.....	6,260,000,000	1,660,000,000	1,360,000,000	34,710,000,000
1889.....	6,695,000,000	1,760,000,000	1,450,000,000	38,095,000,000

JNO. C. NEW,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
London, December 30, 1890.

SHEEP AND WOOL IN ASIA.

SHEEP AND WOOL IN SIVAS.

REPORT BY CONSUL JEWETT.

The province of Sivas occupies the east central part of Asia Minor, extending from the Black Sea on the north to the Anti-Taurus Mountains on the south. It has about the same latitude as Pennsylvania and, generally speaking, about the same climate. Its area is some 200 miles north and south and 150 miles east and west. Its surface is broken by many ranges of hills and mountains intersected by numerous valleys and passes. Its principal river, the Kizil-Irmak (ancient Halys), describes a great curve through it, so that a large part of the province is traversed by it. Hundreds of smaller streams flow into the Kizil-Irmak, affording an abundance of water for the requirements of sheep and cattle. Sheep-raising is carried on in all parts of the district.

The number of sheep in a flock varies from 300 to 800, according to the custom prevailing in the several districts. There are 2 shepherds to each flock. Sheep sell for \$1 to \$1.60 each. Fleeces weigh from 4 to 7 pounds each.

Table showing the number of sheep and goats in the province of Sivas.

Name of <i>kaza</i>	Sheep.	Goats.	Mohair goats.
Sivas.....	707,946	38,536	6,618
Azirieh.....	141,530	66,684	1,302
Kotchkir.....	696,690	75,393	.....
Gurun.....	32,715	11,295	3,061
Hafik.....	72,327	77,631	60
Darende.....	10,556	6,535	.....
Divrik.....	30,725	41,466	.....
Tounus.....	76,841	25,850	11,860
Yildiz-elle.....	71,873	46,049	4,959
Tokat.....	71,551	90,216	2,708
Zielleh.....	24,666	62,498	8,097
Erbaa.....	52,726	36,525	106
Niksar.....	32,190	19,834	78
Amasia.....	46,570	67,434	8,884
Ladik.....	7,991	6,690	53
Khansa.....	10,139	17,579	15
Marsivan.....	13,535	10,766	1,770
Kenpru.....	19,571	27,791	1,020
Gumush.....	19,592	21,501	793
Osmanjik.....	16,939	21,711	7,136
Medjid Ensu.....	18,674	48,938	2,489
Karahizzar.....	19,641	25,378	.....
Harmidié.....	40,100	25,950	3
Sonsheri.....	31,003	26,405	.....
Koilahizzar.....	16,810	31,681	.....
Alijura.....	15,366	34,221	.....
Total.....	1,071,265	965,055	61,010

Besides these, there are numerous flocks belonging to nomad Kurds, who drive their flocks from one part of the country to another in search of pasturage. These are not within the control of the Government, and the sheep tax can only irregularly be collected, so that the number of these sheep can not be ascertained. They, however, form but a small proportion of the whole. The sheep tax collected the past year amounted to \$322,489.20.

METHODS.

Shearing is done by hand, usually in May or June. In some districts the wool is kept clean on sheep by driving them daily through a stream; in others the sheep are washed previous to shearing. In some places the wool is not washed preparatory to marketing.

This report has been long delayed by reason of an endeavor to obtain from the *mudirs* in the several *kazas* information as to the different local methods and customs as relates to sheep and wool. The replies, however, have been few and meager. Those received give the following details as to the methods in vogue in the *kazas* named:

Azizieh.—Number of flocks, 398; average number to flock, 400. At Moosoudgili the wool is washed before shearing; in other places the wool is sheared and sold without washing. Wool is used locally for making a cloth of white, gray, and black (natural colors), also for making mattresses. At Sarij and Saidabbud carpets and curtains are made.

Hafik.—Sheep are raised principally near the towns of Courmasli and Tojaki. Flocks are, as a rule, larger than in other districts. Wool is sold unwashed and is manufactured into socks and carpets.

Darendé.—Sheep are kept in all parts of the *kaza*. Flocks consist of about 500 sheep each; cost per sheep averages 30 piasters (\$1.30). Wool is sheared in June. Unwashed wool sells for 22 to 28 piasters (96 cents to \$1.20) the batman, which is equal to 6 to 8 cents per pound. Mattresses and socks are manufactured. Different styles of the cheaper sort of carpets are made with handlooms at Agdeh-dagh, near Darendé.

Zara.—A flock is estimated by merchants as having 500 sheep. Wool is sold to the merchants of Sivas. Ten thousand sheep are annually sold to Konieh. The wool is washed before selling. Carpets and socks are manufactured.

Divrik.—Sheep are principally owned by Dirdjan Kurds. Flocks are small, averaging about 200 each. Shearing is done in June. Wool is sold unwashed. Socks and cloth are manufactured.

COMMERCIAL DESIGNATIONS.

There are no special designations of wool, except washed and unwashed. Washed wool is termed "yiapak yikanmin" and unwashed "yikan-mamin."

USES OF WOOL.

Wool is used locally very largely for making yarn. This is spun upon a distaff, of which there are two kinds, called "karman" and "chikvik," both

of very rude form. Nearly every woman has one and employs her leisure time in making yarn. The product is very coarse and rough and not used except for the coarsest cloths. It is largely used in knitting the coarse socks used by the natives. The yarn is dyed at home. A sample of these socks is sent herewith. Much of the wool exported comes back in the form of yarn manufactured at Manchester, England. The looms are of the simplest construction and are all operated by hand. No shuttle is used, the thread being passed by hand. The Manchester yarn is very extensively used at Gurun in weaving cloth of a comparatively fine quality. Samples of the cloths produced there are sent herewith. Some 4,000 bundles of yarn are imported annually. There are 500 looms (hand) in the town, and about 20,000 arshins (1 arshin=28 inches) of cloth are manufactured annually at an average value of 45 cents per arshin. The cloths are 1 arshin in width. There is also at that town a large industry in making the shawl-like girdles worn by both sexes; these are made from native yarn or native and Manchester mixed. The annual production is 400,000 pieces. Native yarn is also used throughout the province for making rugs and carpets; these are made on handlooms worked by women and girls in their own houses. There are no figures available to show the amount of the annual product, but it is very considerable, as every village has a number of looms.

Coarse varieties of cloth are also manufactured in Sivas, Tocat, and many other towns. These are usually very narrow, often not more than 8 inches in width. The yarn for these cloths is not dyed.

The export of wool from the port of Samsoun amounted, in 1889, to 378 tons and of mohair to 317 tons. Most of this goes to Smyrna in the first instance.

HISTORICAL.

In early times Asia Minor was celebrated for its fine breeds of sheep and the high quality of its wool, but since many centuries the fat-tailed variety of sheep has replaced all the finer breeds. Nothing has been done to improve the quality. The well-known characteristic of this breed is the enormous tail, which is one mass of fat. These tails will sometimes weigh as much as 18 pounds each and give some weight of credibility to Heroditus's story that in Cilicia the sheep had little carts attached to them that they might the more easily carry their tails. Some shepherds practice cutting off a part of the tails of lambs, severing them at the third or fourth vertebra. This is done from the belief that a large part of a sheep's nourishment goes to the benefit of the tail. It is said, as an evidence of this, that it has been noticed that during times of drought, when pasturage is scant, the sheep's body in general does not comparatively show the effects of lack of food, but that the tail becomes smaller and thinner.

ANGORA.

The finest variety of wool produced in Asia Minor is that of the mohair goat, generally known as the Angora goat. This variety flourishes in large

numbers only in the Angora district, though small flocks of them are to be seen in most all the other parts of Asia Minor. In this province there are some 60,000 only. This breed is a new importation compared to the fat-tailed sheep. No historical notice of them exists prior to the sixteenth century, when the French traveler Pierre Belon refers to them. The Byzantine writers are silent in regard to them, so that it seems probable that they were introduced by the Turks when they became masters of the country.

H. M. JEWETT,

Consul.

UNITED STATES CONSULATE,

Sivas, January 1, 1891.

THE WOOL TRADE OF INDIA.

REPORT BY ACTING CONSUL BALLANTINE, OF BOMBAY.

With reference to the Asiatic sheep and wool circular of the Department, dated September 19, 1890, I have now the honor to forward for your information the accompanying copy of a letter received from the director of land records and agriculture, Bombay. I have also forwarded in a separate cover a copy of the pamphlets referred to by Mr. Ozanne.

H. BALLANTINE,

Acting Consul.

UNITED STATES CONSULATE,

Bombay, November 22, 1890.

LETTER FROM LAND DIRECTOR OZANNE.

[Inclosure 1 in Acting Consul Ballantine's report.]

POONA, November 7, 1890.

SIR: With reference to your letter dated 24th ultimo, I regret to have to inform you that the information asked for in the circular forwarded with a copy of Mr. Ballantine's letter is not available. This presidency, you are aware, is not a wool-producing province, and the small exports claimed by it chiefly come from Cutch and Kathiawar. The wool produced in the other parts of the presidency is coarse and just sufficient to meet the local demand for inferior blankets. The superior, Karmatak blankets, mostly in native use, come from the Mysore territory.

I would, however, recommend for your perusal a selection from the records of the Government of India, revenue and agricultural department, by Dr. Watt, reporter on economic products, which presumably contains all the information available on the subject. The pamphlet (vol. 1, part 1, No. 3, of 1888-'89) may be obtained from the Government of India.

I have, etc.,

E. C. OZANNE,

Director of Land Records and Agriculture, Bombay.

J. L. SYMONS, Esq.,

Deputy Chairman, Chamber of Commerce, Bombay.

THE WOOL TRADE OF INDIA.

[Inclosure 2 in Acting Consul Ballantine's report.]

SELECTIONS FROM THE RECORDS OF THE GOVERNMENT OF INDIA, REVENUE AND AGRICULTURAL DEPARTMENT, BY THE REPORTER ON ECONOMIC PRODUCTS.

Prefatory note.

The information contained in these pages has been collected with the object of supplementing the particulars regarding wool furnished in the monograph on woollen manufactures of the Punjab in 1884-'85 by Mr. D. C. Johnstone, assistant commissioner, which was published by the government of the Punjab.

It is very difficult, with the imperfect and incomplete statistics we have of the agricultural live stock of this country, to estimate even approximately what is the total wool production of India. Mr. Orrah, deputy superintendent of the Boglipoor jail, in his letter dated the 15th of June, 1887, addressed to the director of land records and agriculture, Bengal, states that it is calculated that 30,000,000 sheep yield on an average 111,000,000 pounds of wool, or about 4 pounds of wool to the fleece. These figures refer, it is presumed, to the whole of India, as they can hardly be intended for Bengal alone. Mr. Orrah's estimated production appears to have been pitched too high. He puts the average yield per sheep at 4 pounds; this is the average for England, where it varies from 10 and even 12 pounds for the merino sheep to 1½ pounds for an animal from Hereford. In India sheep are, generally speaking, sheared twice a year, viz, once in spring (March and April) and again in autumn (October and November), and at each shearing not more than 1 pound, on an average, is obtained from each sheep, so that the annual yield per sheep is about 2 pounds. That this quantity is not more is natural in a country where the climate is warm and where the animals receive less care and attention than in the United Kingdom. Assuming the average yield per sheep to be 2 pounds, the total production in India would be 60,000,000 pounds, *i. e.*, 30,000,000* sheep (which number may be accepted as approximately correct) by 2 pounds; but to this something must be added, as in speaking of wool in this country the term is used in its widest sense so as to include the fleece of sheep, goats, and even camels. Adding 20 per cent., which perhaps is a reasonable margin to allow, we get $60,000,000 + 12,000,000 = 72,000,000$ pounds as the total production of all kinds of wool, and, allowing for net exports from India, the remainder would give a consumption of one-fifth of a pound per head of population in India, the population being reckoned at 250,000,000 people. In England the consumption per head is estimated at 2½ pounds; but it can be nothing like this figure out here, where the consumption to any appreciable extent may be said to be practically limited to the region which would be above a line drawn from the north of Bombay to the west of Patna. Outside that region cotton takes the place of wool in the shape of padded coats or quilts. The manufactures of wool by natives consist mostly of shawls, coarse cloths, blankets, carpets, rugs, felts, saddle-cloths, packs for bullocks, and ropes. The working up of the finer materials under European supervision into blankets, serges, broadcloth, etc., is confined to the mills in Bombay, Dhariwal (Punjab), Cawnpoor (Northwest Provinces and Oudh), and Bangalore (Mysore).

India received, on an average, during the last 3 years 10,500,000 pounds, valued at 15¾ lacs rupees, from across the frontier by land. The chief sources of supply are Afghanistan (Cabool and Candahar), Beloochistan (Khelat and Lus Bela), and Thibet, the percentage contributed by each to the total imports being 61, 25, and 4, respectively. The importing provinces are Sindh, the Punjab, Northwest Provinces and Oudh, and Bengal, the proportion taken by each being 82.6, 13.2, 2.2, and 2 per cent., respectively. The imports into Sindh are mostly for shipment, while those into the other provinces are chiefly for home consumption. Candahar and Beloochistan supply Sindh; Cabool, the Punjab; and Thibet, the Northwest

* In the return of agricultural stock for 1886-'87 the number of sheep and goats is entered as 25,500,000, but this is exclusive of the Central Provinces and Bengal, for which figures are not available at present.

Provinces and Oudh and Bengal in about equal proportions. About 6 or 7 months ago inquiries were made in Parliament regarding the development of the wool trade between Bengal and Thibet by increasing the supply and improving the quality of Thibetan wool, which realizes four times the price of any other wool. It will be seen, from what has been stated above and from the correspondence with the director of land records and agriculture, Bengal, that the trade between Bengal and Thibet, although capable of considerable development, is at present insignificant, hardly amounting to 200,000 pounds, and that it will remain so until the restrictions imposed on trade at the frontier by Thibetan officials are removed and a regular demand there is insured. The efforts hitherto made to develop this trade have met with little or no success. The imports during the current year have collapsed, owing to political complications on the frontier.

The arrivals of foreign wools in India have been increasing considerably during the last 4 or 5 years, having risen from 7,200,000 pounds in 1884-'85 to 12,200,000 pounds in 1887-'88, the latter being the highest quantity on record during the last 10 years; and they continue to augment, as will be seen from the following statement of imports for the 5 months ending August (later figures have not yet been published) of the last 3 years :

	Pounds.
1886-'87	784,000
1887-'88	2,240,000
1888-'89	4,917,000

The expansion of this trade is due partly to the opening of the Sindh-Pishin Railway, by which 7,333,000 pounds of wool were received in 1887-'88 as compared with 1,100,000 pounds in 1880-'81, or 6 years ago, when the line was first constructed, and to a greater extent to the steadily increasing direct shipments from Kurrachee to England, owing to this port improving considerably its facilities for cleaning, pressing, and preparing wool for the European market, and thus decreasing its former large consignments to Bombay for the purpose and cheapening the cost of transit.

The exports by land to frontier states are insignificant.

The imports by sea have averaged during the last 3 years 3,200,000 pounds, valued at 8.3 lacs rupees. These come from places on or near the Mekran coast and the Persian Gulf which are largely inhabited by pastoral tribes, and these receipts—like those by land—have also been increasing during the last 4 years, though not so much, the arrivals in 1887-'88 being 3,470,000, against 2,590,000 pounds in 1884-'85. All this wool is, practically speaking, taken by Bombay and Kurrachee, the former receiving at present a little more than the latter.

The average reexports of foreign wool for the last 3 years were nearly 10,000,000 pounds, valued at 43.3 lacs rupees, these being taken almost exclusively by England. Of these reexports, about 70 per cent. proceeds from Kurrachee and 30 per cent. from Bombay.

It will thus be seen that out of the 13,750,000 pounds imported by land and sea into India 10,000,000 pounds are reexported, leaving, it would appear at first sight, 3,750,000 pounds for consumption in India; but the quantity is really less, as wool is exported in a state different from that in which it is received in India, having to be cleaned, assorted, and pressed at Kurrachee and Bombay before shipment; but the process is apparently far from thorough, judging from the recent reports from England, in which it is stated that the wool received is often loaded so heavily with sand (as much as 70 per cent. at times) that the buyers there are beginning to be very cautious about transacting business in it. Some deduction must also be made, owing to the fact that some of the wool is shipped as Indian wool, among the exports of which it thus figures.

Most of the foreign wool which remains in the country is consumed in the Punjab, the remainder finding its way to the woolen mills at Bombay, Cawnpore, and Bangalore. A small quantity of Australian wool is imported by the Egerton mills in the Punjab via Calcutta, as it is stated that the native wool does not suit some kinds of English machinery.

The largest quantity of wool consumed in the country, both foreign and native, is apparently in the Punjab, regarding the manufactures of which Mr. Baden-Powell writes as follows:

"Woolen fabrics are not much made in the plains, except coarse blankets. The best come from Rohtuk, but the produce of Sirsa and Leia is by no means despicable. *Pashmina* fabrics, embroidered with silk, and plain *pashmina* cloths are produced extensively at Amritsi and Ludhiana and a few at Lahore. Shawl-weaving, an art introduced by emigrated colonies of Cashmerians, is practiced at the same cities, as also at Nurpur and Admanagar, but with greatest success at Amritsir. None of these articles, however, equal, either in the fineness of texture or beauty of colors and design, the genuine fabrics of Cashmere. The shawl-weaving of Gujerat and Goordaspoor is quite inferior. In Lahore shawls are made from 'Kabuli' *pashm*, a wool which is inferior to the Thibetan shawl wool. These shawls are plain and not patterned like others. They are called 'Lahori Chaddars;' the wool is the produce of the 'Dumta sheep.' (Pages 7 and 8, vol. I, Punjab Products, 1868.)"

It is stated that the imports of the true *pashm*, or Thibetan shawl wool, into the Punjab are being displaced by those of the inferior *pashm*, the latter, owing to its cheapness, being the most popular in the markets of the present day.

The exports of Indian wool, as returned during the last 3 years, were, on an average, 23,400,000 pounds (valued at 91.4 lacs rupees), towards which Bombay contributed 72 per cent. and Kurrachee 27 per cent. Bombay draws somewhat largely from Sind, its imports in the 3 years 1884-'85, 1885-'86, and 1886-'87 being, respectively, 8,210,000, 7,580,000, and 3,720,000 pounds; these figures show that Kurrachee is now, as stated before, exporting wool more largely direct to England instead of sending it away to Bombay to be prepared for shipment. The following figures, showing the exports by sea from Bombay and Kurrachee during the 6 years 1882-'83 to 1887-'88, indicate the same tendency on the part of Kurrachee:

Year.	Bombay.	Kurrachee.
	<i>Pounds.</i>	<i>Pounds.</i>
1882-'83.....	19,600,000	1,900,000
1883-'84.....	16,500,000	3,400,000
1884-'85.....	15,300,000	3,600,000
1885-'86.....	17,300,000	5,800,000
1886-'87.....	17,100,000	5,900,000
1887-'88.....	16,200,000	7,300,000

The total shipments of Indian wool have increased but slightly in quantity during the past 3 years, having risen from 23,100,000 pounds in 1885-'86 to 23,900,000 pounds in 1887-'88, though in value they show an increase of 10 lacs rupees, better prices being obtainable. On the other hand, the re-exports of foreign wool advanced in quantity from 8,100,000 pounds to 11,200,000 pounds and in value by 19 lacs rupees during the same period. Evidently the growing demand for wool from India is being met by increasing supplies, not of the indigenous article, but of foreign wools from Persia and the frontier states, the chief entrepôt for this trade being, as shown before, Kurrachee. It seems doubtful whether the export of Indian wool will ever increase materially, owing to the supply being limited. Much of the wool that is produced is required for local consumption. Besides, the production is believed to be contracting in consequence of diminishing grazing areas caused by the extension of cultivation. The grazing in forests is also becoming somewhat restricted.

England is also the largest customer in the case of the exports of Indian wool, which is there worked up into carpets, rugs, and blankets. At present India plays a somewhat unimportant part, as compared with Australia, in supplying England with wool, as out of an average import of 555,000,000 pounds during the last 3 years Australia contributed 68.5 per cent. and India only 5.6 per cent.

The following table shows the imports of wool (both foreign and Indian, no distinction between the two being made at present) into Bombay and Kurrachee by rail during the year

1887-'88 and the sources of these imports. The arrivals by rail of wool at the other seaports are insignificant.

Whence exported.	Imported into—		Total.
	Bombay.	Kurrachee.	
	Pounds.	Pounds.	Pounds.
Bombay.....	2,320,000	.....	2,320,000
Sinde.....	.....	3,840,000	3,840,000
Punjab.....	2,240,000	8,240,000	10,480,000
Rajputana and central India.....	5,360,000	.....	5,360,000
Total.....	9,920,000	12,080,000	22,000,000

In Bombay wool is largely produced in the Deccan, and sheep and goats are said to abound in certain parts of Sinde. In the Punjab a small part of the exports is drawn from the great sheep-breeding district of Hisar, but by far the greater portion is reported to comprise the produce of the adjoining tracts in Rajputana and of the Himalayas and the Transhimalayas. Looking to the fact that the Punjab receives from frontier states not more than 1,333,000 pounds yearly, it would appear that about 60 per cent. of the imports by rail into Bombay and Kurrachee consists of the produce of Rajputana alone, and there seems no reason to doubt this, as, judging from the reports printed in the appended collection, Rajputana is evidently a large wool-producing country. In England Rajputana wool is chiefly utilized in making carpets.

The trade in wool in India is important and can be largely developed if woollen manufactures are taken up extensively out here and greater facilities are afforded for importing foreign wool from across the frontier. In Bombay the increasing demand for woollen piece-goods is said to be engaging the attention of manufacturers there, so much so that one woollen mill is in course of construction and three or four more are contemplated. At present some of the cotton mills in the presidency are engaged to some trifling extent in the manufacture of woollen goods in addition to their ordinary business. According to the statistical tables for British India (twelfth issue) published last year by the department of finance and commerce, "there are four woollen mills, viz, two at Cawnpoor, one in the Punjab at Dhariwal, in the Goordaspoor district, and one at Bangalore. One of the Cawnpoor mills is a private concern; the other three are joint stock companies, with an aggregate nominal capital of 18 lacs rupees. The Dhariwal mill does not state its outturn; the other three report an outturn of the aggregate value of $5\frac{1}{4}$ lacs rupees in 1886, against $7\frac{1}{4}$ lacs rupees in the preceding year and $3\frac{1}{4}$ lacs rupees in 1884. The number of looms and spindles employed in 1886 by the three mills was 242 and 5,420."

F. M. W. SCHOFIELD.

REVENUE AND AGRICULTURE DEPARTMENT, *December 27, 1888.*

FURTHER NOTES AND CORRESPONDENCE ON WOOL PRODUCTION IN INDIA.

Demi-official from Lieut. Col. D. G. Pitcher, officiating director of land records and agriculture, Northwest Provinces and Oudh, to the Government of India, dated Camp Chardah, Bahraich, the 17th of March, 1887.

Your demi-official, dated the 4th of February, 1887, in regard to wool production in Oudh is at hand. I have been making inquiries while on tour through Oudh, and, from all I can learn, production, at no time very extensive, has greatly decreased with the extension of cultivation and consequent diminished grazing area.

The whole of that produced is locally woven into coarse blankets. For 1885-'86 Oudh exported by rail 36 maunds to Bengal and 71 maunds to Cawnpoor. The two woollen mills at Cawnpoor state that they get no wool from Oudh. I tried 3 or 4 years ago to induce the Cawnpoor woollen mills to procure wool from the pargana in which I am now encamped, once famous for the quality of the blankets woven; but nothing came of it, and I now find that the *gareriyas*, or flock masters, have nearly all cleared out since grazing in the forests has become so restricted and since cultivation has extended. They have gone over to Nepaul.

As with the increase of Indian woollen mills there must be a better price for wool than formerly, it will be interesting to notice whether the recent opening of the Bengal Northwestern Railway to Nepalgunge, near here, attracts any wool from Nepaul. A branch line from Bahraich to Byramghat would very probably stimulate exports and imports to Nepaul far more than the present alignment.

Extract from a demiofficial letter from Lieut. Col. D. G. Pitcher, dated Serinagur, the 26th of October, 1887.

I have been making inquiries up here about the wool trade. At present but a small quantity is imported from Thibet; but, if any firm would take the matter up systematically and make advances, any quantity, they say, can be procured at from 20 to 25 rupees at Josimath, from whence to Najibabad it would cost in carriage another 4 to 5 rupees per maund.

Demiofficial from the assistant director of land records and agriculture, Northwest Provinces and Oudh, to the Government of India; No. 4389, dated Cawnpoor, the 10th of November, 1887.

On receipt of your demiofficial, dated the 20th of May, 1887, I consulted the principal correspondents of the department in all the districts of the provinces about the production and disposal of wool in their districts. From their replies, I see that the only part in these provinces which produces any wool worth consideration is the tract bordering the River Jumna, which enjoys large areas of grazing land for rearing sheep. Much of the wool that is produced there is used up locally in the manufacture of *kamals*, *lois*, *numdahs*, etc.

What is left is brought to the mills at Cawnpoor, which work about 15,000 maunds annually, fully one-fourth of which is supplied from this tract. The chief source of the supply of wool is the Punjab, which sends about two-thirds of the total quantity consumed at the mills; a quantity is also received from Rajputana and Nepaul. The several varieties command the following prices per maund at Cawnpoor:

	Rupees.
Desi (produced in the provinces).....	10 to 12
Amritsir (Punjab).....	14 to 15
Narnal (Rajputana).....	15 to 17
Nepaul.....	20 to 22

Note by Surgeon Maj. T. H. Hendley, honorary secretary of the Jeypoor museum, on the production of wool and woollen goods in the Jeypoor state.

In Jeypoor sheep are principally reared by Gujars and Jats. In ancient times northern Jeypoor, or, at all events, that part of it which was included in Virata (Bairat), was famous as a sheep-producing country, and even now it is stated in the Rajputana Gazetteer that the principal export from Shekawati, or North Jeypore, is wool. The best wool, however, is said to come from the western border, which is not, indeed, as good as that from Joodpoor and Bikaner; good wool is also obtained at or near Malpoora, southwest of Jeypoor city, the seat of the *numdah*, or felt, industry.

Sheep are kept in most villages, and the wool is bought up by dealers and the *namad-gars*, or felters, who may be either Mussulmans or Hindoos. *Khatiks*, or butchers, also sell the wool from dead or slaughtered animals, which, being inferior in quality (*khos-ki-un*), is only

used for making coarse felts. There are about 40 families of *namadgars*, Mussulmans, living in the Namadgar-ka-Mohalla, Jeypoor city. About 15 families of *khatiks*, who live near the old Kotwali, also deal and work in wool. The census return does not give particulars under this head for either the state or capital.

Sheep, and even lambs, are shorn twice a year, in the months of Chaitra (March and April) and Kartik (October and November). The wool obtained in the spring is white, that in the autumn yellowish in color, owing to its having been worn in the rainy season. The *namadgars* wash the coarse wool and carefully clean it in a cotton-cleaning machine. They tread the wool repeatedly in soap and water in large pans and squeeze it into balls, which, after drying in the sun, are cleaned by the *pindaru*, or cotton-cleaner, with his bow or "tant," or with a machine.

The superintendent of the Jeypoor jail, who until recently bought wool in the Jeypoor bazaar for carpet-making, has now purchased it from Sambhur through an agent who obtains it from the neighboring villages; the best quality, he adds, comes from beyond the Joodpoor border, but it contains more *barut*, or seeds of grass, thus making it difficult to work. Three qualities have been obtained; the last lot cost 14 rupees 12 annas per maund, against 18 or 19 rupees for wool of similar quality bought at Jeypoor. This is the cheapest wool he ever bought in Jeypoor. It contains less sand and dirt than usual. Some of the selected wool would be worth from 25 to 30 rupees per maund in Jeypoor. It comes in the form of a twisted rope tied in a knot, each piece weighing a little over 8 chittacks (Jeypoor weight). The fleece from his own sheep, the wool being coarser, weighed about $8\frac{1}{2}$ chittacks.

From other inquiries, I find that in Jeypoor the fleece of a full-grown sheep weighs from three-fourths of a seer to 1 seer, or 2 pounds 2 ounces. In England the average is 4 pounds to the fleece, varying from 10 and even 12 pounds for the merino sheep to $1\frac{1}{2}$ pounds for an animal from Hereford, where wool is fine, as the sheep are kept very clean. In a warm climate it is natural for the fleece to weigh less. Sheep are not dipped before shearing in Jeypoor.

I am informed that uncleaned wool may be purchased at rates varying from 10 to 12 or 13 rupees per maund. The wool of dead sheep can be bought for 8 rupees per maund. It is sent in large quantities to Bombay, Nagore in Joodpoor, and other places.

Chaura-ka-Sarur, about 25 miles from Jeypoor towards Shekhawati, is the best sheep-breeding ground in the state.

The principal use of wool in Jeypoor is to make felt, the *numdahs* or *namads* of Persia, in which country carpets are generally placed in the center of the room, set, as it were, in a framework of soft, thick *namad*, or felt. I think there is little doubt that this art was introduced into Rajputana from Persia through Delhi. It is an industry of some importance. At Malpoora, the principal seat of it, large numbers of saddle *numdahs* are made for Bengal cavalry regiments; also *gugis*, or hooded cloaks, for native horsemen and persons who are exposed to wet weather; *asans*, or round prayer carpets, used by Hindoo devotees; the *Jai-nimas*, or Mussulman prayer carpet, which is of oblong shape, marked out with a niche in colored felt; gun covers; *chakmas*, or square rugs; and *kamals*, or coarse blankets. Some of these felts are remarkably fine and durable. The better kinds are beautifully white, the common ones yellow or dark gray.

The *numdahs* are thick and fairly waterproof; many of them are tastefully ornamented with small pieces of colored felt arranged in artistic designs, and most of the prayer carpets are made in different layers, of which the edges are cut into curves and toothlike projections. Felt is also made at Tonk and in Jeypoor. Blankets are manufactured at Hindon, Phagi, Madhorajpura, Choundlai, Chatson, Sambhur, Naraina, Bhandarej, Jobner, Chomu, and Samodh.

Fine woollen cloths (*lois*) are made in Nagore and Bikaner, not, I think, in Jeypoor, though I am not quite sure whether coarse examples can not be had from Losal, on the west border.

I can not discover that any mixed cotton and wool cloths are made here. *Chakmas*, made in the autumn from yellow wool, are sold at 17 rupees per maund; the best white ones, made

at Jeypoor, cost 20 rupees per maund. Tonk *chakmas* of good quality are worth 24 rupees per maund. Blankets cost from 8 annas to 1 rupee each.

Translation of a kaifiat from the council of Bikaner by A. P. Thornton, esq., officiating political agent, Bikaner, dated the 31st of March, 1887.

We have received your kaifiat, dated the 16th of March, 1887, requesting information regarding production of wool.

In reply, we beg to state that in Sumbat 1942, 15,811 maunds, and in Sumbat 1943, 19,073 maunds of wool were exported from Bikaner territory. This gives an average of 18,341½ maunds of wool exported per year. The amount of produce of wool can not be approximately estimated, but, in Sumbat 1942 and 1943, 1,624 and 1,429 maunds of woollen cloth were exported and about 2,000 maunds of woollen cloth used in this state; therefore, the average produce per year may be taken at 22,000 maunds, including the wool and woollen cloth exported to other territories. The average price is 20 rupees per maund and 2 rupees customs duty; it is exported to Bombay via Bangla, in the Punjab. The state of trade is good, because the quantity which remains over the quantity consumed in this state is all sold.

Demiofficial from Maj. P. W. Powlett to Mr. Colvin, dated Joodpoor, the 6th of April, 1887.

As desired in your demiofficial of the 9th of March, I give the following information regarding the wool trade in western Rajputana. It is not possible to state with any accuracy the gross produce of wool, but for Joodpoor it may be roughly calculated at 50,000 to 60,000 maunds. During the last 4 years wool has been exported from Joodpoor to Bombay chiefly by railway, as follows:

	Maunds.
1883-'84	39,180
1884-'85	32,100
1885-'86	43,400
1886-'87 (10 months)	43,150

The increase of export in 1885-'86 and 1886-'87 is attributed to the reduction in October, 1884, of the customs duty on wool from 1 rupee 4 annas to half that amount, and the extension of the Joodpoor Railway line from Luni to Pachbhadra, which is to be opened in a few days, will, it is hoped, further stimulate the wool trade of Joodpoor.

The annual export from Jeysalmere and Serohee* may roughly be taken at 5,000 and 2,500 maunds, respectively. Serohee wool is said to be much inferior in quality to that of Joodpoor or Jeysalmere, and consequently, while a maund of Serohee wool seldom fetches more than 7 or 8 rupees, the price of same quantity of Joodpoor or Jeysalmere wool varies from 12 to 25 rupees. The best wool is obtained at the second shearing after the cold weather.

Kishenghur state.—The estimated produce of wool was 1,000 maunds. The quantity of wool exported was 700 maunds. The fabrics made in this state are *ghooghi*, *chakma*, *kamal*, etc. Wool is sold at 18 rupees per maund; *kamal*, from 1 to 3 rupees per piece; *ghooghi*, from 8 annas to 2 rupees; *ausan*, from 2 annas to 1 rupee, and *chakma*, from 8 annas to 1 rupee 4 annas, per piece. There is a little increase in the trade compared with last year.

Demiofficial from F. Henvey, esq., resident, Jeypoor, to the agent governor-general, Rajputana, dated Jeypoor, the 18th of April, 1887.

With reference to Mr. Colvin's demiofficial letter of the 9th of March, 1887, I inclose a statement showing the figures of the Jeypoor wool trade. I asked Babu Kanti Chunder whether he could get me any interesting particulars about woollen fabrics, etc., and he has sent me a note, copy of which also is inclosed.

* To Bombay via Madar and Pindwara.

Chakma.—The *chakma* is a woolen sheet of oblong form and is made of different sizes. It is used for sheltering goods from rain and as a protection from cold, and also to spread on the ground. Ordinary *chakmas* are 2 yards by 1 yard, and are sold at about 1 rupee 8 annas each. *Chakmas* (prepared to order) are used for covering carts, raths, etc., and can be made of any size as the purchaser may require, varying in prices according to the quantity and quality of wool and evenness of the fabric.

Ghooghi.—The *ghooghi* is a warm covering worn as a protection against rain and cold wind. It gradually spreads out from the top, which consists of a sort of a hood. *Ghooghis* are of two kinds, one for walking and the other for *sowars*, or horsemen. The length of the one used by people on foot is just sufficient to cover the human body; that of the other, used by *sowar*, serves to cover also the hip of the horse, and its length is always in proportion to its width. *Ghooghis* (made to order) can be prepared up to the value of 25 rupees.

Ordinary *ghooghis* for walking purposes are sold at 1 rupee 8 annas or 2 rupees each, those for *sowars* from 3 to 5 rupees each; but the price generally varies according to the whiteness and softness of the wool, thickness and evenness of the fabric.

Fabrics made of yellow, uncleaned, and coarse wool, uneven in their make, and so thin that they are not water-tight, when turned towards the sun, let the light through and are not good, but those made of white and soft wool, even and thick, are costly.

Dalli.—The length and breadth of the *dalli* are exactly according to the size of saddle, or *kathi*, under which it is placed to protect the back of the horse from injury, and its price varies according to its thickness, evenness, and the quality of wool of which it is made.

Ausans.—The *ausans* are of two kinds, square and circular. Square *ausans* are 2 feet square, varying in thickness like that of *chakma* and *ghooghi*. *Ausans* (prepared to order) are 1 to 1½ inches thick; circular *ausans* are of different diameters. Ordinary circular *ausans* prepared for sale are generally 2 feet in diameter, and are worth about 8 annas each. Circular *ausans* (prepared to order) are 1 to 1¼ yards in diameter, and are more costly. Hindoos sit on *ausans* when they worship.

These woolen fabrics are often ornamented with borders and flowers of layers of wool worked on the fabrics. Simple borders and flowers are made of white wool, of which the fabrics are made, and sometimes pieces of broadcloth of different colors are cut into flowers and pasted on the fabrics. The *ghooghis* and *chakmas* of Malpoora owe their credit to the water of a certain well, which gives a peculiar luster to the fabrics.

The fabrics described above are made of white wool. Black wool is chiefly used for making blankets and grain sacks.

First of all, wool is cleaned of all foreign materials and then combed; when it is ready for use, a piece of cloth of the measurement of the fabric to be made is stretched out, and the quantity of wool of which it is to be made is spread upon it evenly by a wooden instrument. Wool for preparing *chakmas*, *ghooghis*, etc., is spread on low ground, so that the soap water which is required in the process may not uselessly flow away. After the wool has been spread on the measured cloth, water is sprinkled on the wool, and then the wool is mixed with soap and water and pressed down with the hands and elbows. This process is technically called "rudda," which makes the fabric lasting, even, and exact to the measure. These fabrics are not made by any machine, but prepared by a peculiar process as follows: The cleaned wool is soaked in an infusion of soap, gum, alum, and water. It is then spread upon the floor over a piece of white cloth in flakes, saturated with the said fluid, forming any shape wanted, and beaten in with wooden handle until well set. The piece is then soaked again in the same solution and exposed to the sun, after which it is washed smoothly. These fabrics are remarkably tough and impervious to water. About a quarter seer of soap is required in preparing a *chakma* weighing 2 seers.

After the *chakma* and *ghooghi* have been pressed, the water is not wrung out, but they are spread over *pucca* walls or on beams of wood till dry. After the woolen fabrics have been prepared, they are smoked with sulphur to make the color bright.

High, dry, and sandy places are best suited for breeding of sheep, but clayey and damp soil is not good for them.

In the villages of Malpoora, Phagi, Chaksoo, and Dousa wool is produced plentifully, and in the first-named village woollen fabrics are made. The sheep are large and good-looking; but wool of superior quality is produced in Shekhawati, and the mutton there is better and more nourishing, because the district is sandy, while Malpoora, Dousa, and others are clayey and damp. There are places in Shekhawati, such as Bisas, Ramguruh, and Futtehpoor, conterminous with Bikaner territory, which are remarkable for best sheep yielding excellent wool.

Young sheep yield soft and white wool, and as they grow older their wool becomes coarse and yellowish. Superior fabrics are made of soft and white wool, and are therefore costly. Inferior fabrics are made of coarse wool obtained from older sheep. Sheep are generally shorn twice a year. In Shekhawati sheep are shorn once at the end of Sawan (July) and again at the end of Phagan (March), because after 3 months wool is generally full of the thorns and prickles which grow there. In other districts of Jeypoor territory wool is shorn at the end of Chait (March) and again at the beginning of Kartik (October). The average quantity of wool obtained from a sheep a year weighs 12 chittacks.

Chakmas, ghoghhis, ausans, etc., are not manufactured in Shekhawati, but the villagers, to meet their own wants, get blankets prepared by Chamars for their use and *dhaklas* for their females.

Wool is exported by merchants from Shekhawati to Delhi. The average quantity of wool produced in Shekhawati annually is 1,728 maunds, valued at 32,560 rupees. The average price of wool sold in Shekhawati district is 2 seers per rupee, while in other districts it is sold at 3 seers per rupee, and the reason for this difference is that Shekhawati yields soft wool and the other districts coarse wool.

Note on wool in Bengal by M. Finucane, esq., C. S., director of land records and agriculture, Bengal.

The Government of India having asked me, by demiofficial communication, for some information regarding the trade in wool in Bengal and the possibility of improving the supply or quality of that article, I have made some inquiry on the subject. I now give the small amount of information on the subject which I have been able to gather.

As regards the supply of wool from Thibet and the northern frontier, the following remarks occur in the report of the external trade of Bengal with Nepal, Sikkim, and Bootan, published by the government of Bengal, 1885:

"The quantity of wool available for export from Thibet is believed to be enormous. Between Kamba and Shigatse, within a march and a half of the Sikkim frontier at the head of the Lachen, sheep are killed, not for the sake of their hides or fleeces, which are practically valueless for want of a market, but in order that their carcasses may be dried into jerked meat and sold for 8 annas each. At Kamba itself carpets and rugs are manufactured of the finest quality and of patterns evincing excellent taste and skill; but there is no outlet for these fabrics. Further north, on the Great Chang Thang (or northern plateau), which begins just beyond the Sanpo, within 5 marches of the Kongra Lama, are prodigious flocks and herds which roam at will over the endless expanse. In noticing the improvements in the supplies of wool imported into Bengal from Thibet during 1883-'84, it was remarked in the report for that year: 'It is believed that this trade has dwindled during the current year (1884-'85), partly owing to the difficulties placed in the way by Thibetan officials.' The statistics recorded show that the belief was well founded, for the quantity imported during 1884-'85 was only one-tenth that imported during 1883-'84, viz, 91 maunds, against 911 maunds. With the exception of 19 maunds registered at Rungeet in 1883-'84 and 5 maunds in 1882-'83, the entire supply during the 3 years was brought through Pheydong. The value of manufactured woollen goods (chiefly blankets) during 1884-'85 was 4,415 rupees in excess of the figures of 1883-'84, but 564 rupees below those of 1882-'83. By far the largest are supplies brought via Pheydong."

The following statement shows the quantity of wool imported into British territory from Sikkim and Thibet during the past 5 years:

	Maunds.
1882-'83.....	168.
1883-'84.....	911
1884-'85.....	91
1885-'86.....	2,555
1886-'87.....	1,933

The falling off in imports of wool in 1884-'85, as compared with the 2 previous years, has been attributed to the difficulties placed in the way of this trade by Thibetan officials; but, though this may be one of the true causes of the decline in question, it is to be noted that the trade appears to have been at all times insignificant and irregular. At the same time that there was a decline in the imports of wool it is to be observed that there was a very large increase in the imports of other articles (for example, musk and yak tails), which, however, may be accounted for by the greater facility with which these less bulky articles may be smuggled.

Without, however, questioning the existence or the pernicious effects of restrictions placed by the Thibetan officials on the frontier trade—matters on which I have no knowledge and no special sources of information—I may say that, having made some inquiry on the subject at Darjeeling, I have not seen or heard anything which would lead me to doubt that a considerable trade in Thibetan wool can be developed even under existing conditions by simply creating a steady demand and securing a steady sale for the article in Darjeeling. It will be seen from a letter from Mr. Spencer Robinson, which is annexed, that a merchant trading with Thibet has recently offered to deliver to that gentleman in Darjeeling 10,000 maunds of wool, provided he guaranteed the purchase of it at 16 rupees per maund. The Thibetans, he adds, will not place any obstacles in the way of allowing the wool to come through. If the wool, as stated, can be delivered at Darjeeling at 16 rupees per maund, or, say, 3*d.* to 3½*d.* per pound, and the wool is worth in England 6½*d.* to 7*d.* per pound, as it is believed to be, there would appear to be little doubt that the existence of a steady demand at Darjeeling or some other place nearer the frontier within British territory would lead to a steady supply so far as the resources of Thibet allow. I am not here arguing against the desirability of removing trade restriction, a question which does not come within my province and on which I am not called upon to offer an opinion, but what I am arguing in favor of is the creation of a steady demand for Thibetan wool in Darjeeling by establishing an agency, public or private, for the continuous purchase of it. The attempts being made by Mr. Spencer Robinson, who has, I am informed, much practical knowledge of the subject, will, from this point of view, be watched with much interest. It will be seen from the annexed report, with which I have been favored by the chamber of commerce and from the secretary of the Agri-Horticultural Society, that Thibetan wool, as per sample received from Mr. Spencer Robinson, is supposed to be worth 6½*d.* to 7*d.* per pound in England, where the price is rapidly rising. If this estimate turns out to be correct and wool is forthcoming from Thibet in large quantities, as stated to Mr. Spencer Robinson, the importation of wool from Thibet should be a highly remunerative business.

The following statement shows the exports or imports of wool from and to Calcutta, according to the custom-house returns and statistics of river and rail borne trade in Bengal since 1881-'82:

Year.	Exports.	Imports.
	Pounds.	Pounds.
1881-'82.....	13,446	7,484
1882-'83.....	2,336	41,617
1883-'84.....	32,684	19,613
1884-'85.....	78,395	21,612
1885-'86.....	57,595	86,367

As regards the trade in wool produced in the plains of Bengal, there is very little information available in the records of the Bengal government, and, as the Government of India has called for very early report on the subject, I have not been able to ask local officers for further information regarding it. No attempts have ever been made in Bengal to improve the quantity or quality of wool produced in these provinces. The bare suggestion of the possibility of taking measures with this end in view has been made the subject of gibes and ridicule. It will, however, be seen from the papers annexed that practical men who have given attention to the subject are by no means of opinion that nothing can, or that nothing ought, to be done by Government in this matter. Mr. Abbott, a well-known indigo-planter of Tirhoot, is enthusiastically in favor of endeavoring to improve the breed of Bahar sheep by judicious cross-breeding and is willing himself to undertake the supervision of the experiment on an inexpensive plan, which will be found described in his letter annexed, and Mr. Orrah, deputy superintendent of the Bogliipoor jail, is of the same opinion. I think that Mr. Abbott's plan is an eminently practical one and that cross-breeding on the lines suggested by him and Mr. Orrah ought to be tried. The revenue and agricultural department of the Government of India may, perhaps, be in a position to give some assistance and support by supplying merino or other good rams and ewes. I am myself also in communication on the subject with Dr. Greenhill, of Calcutta, who has been good enough to volunteer his assistance in the selection and importation of good rams from Australia.

I annex some interesting papers with which, through the courtesy of Dr. Lethbridge, I have been favored by Mr. Orrah.

This gentleman has given much attention to the subject of Indian wool, and probably knows more about it than any official in Bengal. Some of his suggestions for effecting improvements in the quality of Bengal wool, owing, no doubt, to his want of acquaintance with the actual conditions of Bengal peasant life, are, I think, impracticable; but he agrees with Mr. Abbott in thinking that much may be done by judicious cross-breeding. Mr. Orrah, being in charge of the manufacture of woollen articles in the Bogliipoor jail, is in a position to offer an opinion of value on the subject, and he bears testimony to the fact that the attempts made to improve the breed of sheep in the Northwest Provinces have led to a marked improvement in the quality of the wool of that province, which, he says, is decidedly superior to that produced in Bengal. Further, he significantly notes that, since the system of cross-breeding sheep by continuous importation of fresh stock has ceased in the Northwest Provinces, the quality of the wool produced is there also deteriorating.

I regret that I am unable to furnish the Government of India at present with more accurate and detailed information on this subject, and have only two practical suggestions to make with a view to improvement in the supply and quality of wool from Bengal and the northern frontier. These are:

(1) That arrangements may be made by which a steady demand and sale can be guaranteed for Thibetan wool in Darjeeling or elsewhere within the British territory; such demand will create the supply and will probably arise without the aid or interference of Government when it is known that wool is forthcoming. If, in addition to this, the government of Thibet can be induced to remove restrictions which must, as a matter of course, injuriously affect trade, all the better; but I am not in a position to offer an opinion on this point. Further, it would perhaps be at first desirable to allow specially favorable rates for carriage of wool from Darjeeling by rail to Calcutta, and orders to have this done have, I understand, been recently issued. It would also be well, if possible, to improve the means of communication by road with the Thibetan frontier.

(2) That, as regards wool produced in the plains of Bengal, the suggestions made by Mr. Abbott for cross-breeding in his letter, which is annexed, be accepted as a tentative measure.

Letter from Spencer Robinson, esq., to M. Finucane, esq., C. S., dated Teendaria, the 17th of July, 1887.

I forward two samples of Thibet wool as received from that country; one is ewe wool, the other ram's wool. I have been selecting wool for a Calcutta merchant during the last week, who is sending it home to England. This is the first shipment of wool sent home. I received a valuation on this wool recently, which was $6\frac{1}{2}d.$ to $7d.$ per pound in England.

The wool trade with Thibet can be developed into a large business, and a merchant trading with Thibet offered to deliver me 10,000 maunds of wool in Darjeeling (provided I would guaranty to buy it) at 16 rupees per maund. He states the Thibetans will not place any obstacles in the way of allowing the wool to come through the passes. He is sending me samples of cloth, etc., purchased by the Thibetans and wishes me to forward them to English manufacturers and let him know the price of such cloth when landed in Calcutta.

Letter from H. E. Abbott, esq., to M. Finucane, esq., C. S., dated Jaintipur, the 27th of June, 1887.

Suffice it, then, to say, as a commencement of correspondence, that, as far as sheep-breeding in Bahar is concerned, I live in the very center of it, and, roughly speaking, my tenants own at least a lac of these useful little animals; but, as far as wool or quality of meat goes, they are of the most wretched description, though, like most things indigenous to the country, hardy to a degree. As I told you personally, I am convinced that judicious crossing would prove eminently beneficial (were Australian or British blood imported) to both wool and mutton. I do not think much outside trade is done in the wool line, the shepherds finding a sufficient market at present by weaving it into blankets, which they dispose of locally; but, with the railroad now at their doors, the industry only wants encouragement to develop into a very valuable adjunct to the commercial economy of the district. Be it always remembered that the grazing in Bahar is for India the best *par excellence*. Sheep, during the hot weather, are driven to the northern *chours*, when for a mere nominal sum they fairly well keep themselves, while during the rains practical farming planters are glad enough to let them have the magnificent grazing of the inevitably heavy undergrowth in their indigo lands, charging the value of one sheep in the hundred for the right; therefore, Bahar is eminently a country suited to sheep-farming; and it behooves Government to improve the breed. Give me a dozen rams and double the number of ewes, allow me 20 rupees a month to keep them up, and I will guaranty to make a present of 90 per cent. of every ram produced in the stock to sheep-farmers in the district and 50 per cent. of the ewes. Your charge shall be no more than the above 20 rupees as long as I am in the country, and when I leave I will give back to Government the same amount of stock that they handed me, or at the end of 5 years I will ask no further aid from Government, but will return it in kind the amount of rams and ewes advanced me. I will with pleasure furnish statistics of the entire births, deaths, and distribution of the stock. Of course, you will fully understand that, should the stock die, I have no claim whatever against you as far as the 20 rupees per month goes. My mere wish is to show how Government aid, properly applied, can benefit the district at small expense and be made, in the long run, almost self-supporting. After a bit, I believe, we could make money by letting out the services of the rams; but this must be done gradually. I have already proved that, as far as horses, poultry, and dogs are concerned, one can, with imported blood and judicious local crossing, do very great things in Bahar; and, as I honestly believe, as far as Bengal is concerned, it could be made the nursery for grain, horses, oilseeds, sheep, cattle, *et hoc genus omne* for the whole of southern India.

In such a country as this the encouragement of horse, sheep, and poultry breeding, of the importation of finer seeds from foreign countries—in fact, the entire working up of Bahar as a wholesale producer for India should be the work of the Government at first and of every Englishman who, like myself, is grateful to it for a happy, if an exiled, home.

Many experiments have doubtless been made, but forgive me if I say unhesitatingly they have been, as a rule, made on wrong lines. They are generally made through the means of the temporary collector of the district, without the smallest effort being made to find whether the gentleman in question has a penchant for this kind of thing. The odds are he has not. Witness the attempt to breed mules in Mozufferpoor.

Report by Mr. Orrah, deputy superintendent of central jail, Boghlipoor, dated the 15th of June, 1887.

I have the honor to submit the following report upon Bengal wools, together with extracts:

Regarding the production and improvement of wool grown in Bengal, it will be necessary to enter somewhat minutely into the characteristics of wool, namely, (1) softness, (2) elasticity, (3) length of staple, (4) uniformity of staple, (5) fineness, and (6) soundness. So far as my experience goes in the working of Bengal wools, I find them wanting in all the aforementioned characteristics.

As regards want of softness and elasticity, I attribute this partly to the hardness of the water the sheep may have to drink, being of a limy character. The scarcity of yolk in the fiber, which is the natural reservoir from which the wool fiber gains its character for softness, etc., shows the sheep are not sufficiently and suitably fed. As regards length of staple, uniformity, fineness, and soundness, these deficiencies are more the result of want of care and attention to the breeding. Good breeding is undoubtedly the main cause by which sheep of all countries are improved or for want of it are deteriorated.

Whilst Bengal wools show these deteriorations all round and contrast very unsatisfactorily with other provinces in the northwest of India, there is one redeeming feature, which is a very valuable one, possessed by the Bengal sheep, and that is they are very receptive, or, in other words, susceptible of being improved more rapidly than many other classes of sheep. The Thibet sheep, for instance, will require much more time to eradicate the coarse hairs and kemps out of the fleece than would the Bengal sheep.

To improve the quality and quantity of Bengal wool, I will mention a few principal methods of treatment necessary for this purpose, for part of which there is some evidence of its having been successful in India, as well as other countries.

Pasturage.—I have spoken of the water as being hard; this seems to point out that land pasturage over Bengal is of a calcic or lime character,* and would undoubtedly not only account for hardness of water, but the pasturage thereof must contain in its grasses, herbs, and trees and vegetation generally a large proportion of calcium; therefore, the food upon which the sheep live and graze must also contain lime, and we see, as a natural consequence, that the wool they grow is dry, natureless, stunted, and irregular in staple, harsh in feeling, coarse, brittle, inelastic, whilst the yolk of the fiber is scanty and poor.

I would therefore suggest that the water which sheep drink should be tested, and, if found to be hard, should be treated chemically with a small sprinkling of oxalic acid,† viz, 1 ounce of the salt of this acid to 500 gallons of water to deposit the lime of waters drunk by the sheep. The washing water for sheep should also have any lime that exists in it deposited before being used.

Quantity and quality of wool, which is distinguished from the fleshy parts of sheep by the large proportion of sulphur which it contains, is very much affected by the soil upon which the food grows; some soils growing poor grasses keep the sheep grazing thereon lean, and, whilst giving finest of wool, yield only 1½ pounds; but a merino fed upon good pasturage of chemically treated soils often gives a fleece weighing 10 to 11 pounds. It is calculated that 30,000,000 sheep yield, on an average, 111,000,000 pounds of wool, or about 4 pounds of wool to the fleece. This quantity of wool contains 5,000,000 pounds of sulphur, which is, of course, all extracted from the soil.

* This is doubtful.

† Impracticable, and, if practicable, would be dangerous, oxalic acid being a poison.

If we suppose this sulphur to exist in, and to be extracted from, the soil in the form of gypsum, then the plants which the sheep live upon must take out from the soil to produce the wool alone 30,000,000 pounds, or 13,000 tons, of gypsum. Though the proportion of this gypsum lost by any one sheep farm in a year is comparatively small, yet it is reasonable to believe that by the long growth of wool on land to which nothing is ever added, either by art or from natural sources, those grasses must gradually cease to grow in which sulphur most largely abounds, and which therefore from growth of wool—in other words, the produce of wool—is likely to diminish by lapse of time where sulphur has for centuries been yearly carried off the land; and again, the produce is likely to be increased in amount when such land is dressed with gypsum or other manures in which sulphur naturally exists.* This, I believe, could be obtained in a very cheap form from the gas works of the country, some of their waste products containing sulphur in a large degree, such, for instance, as the sulphate of lime, a waste product of these works. There probably, also, is a natural form of sulphur found in connection with the rock-salt districts, as geologically it exists in some form in the same stratification. Iron pyrites also contain sulphur in large proportions. Though not acquainted with all the natural products of India, I am quite sure products could be obtained sufficiently low in rates for manuring purposes. No bones of animals ought to leave India, for its land sadly needs it, being also a valuable manure for sheep farms, in addition to the various dungs of animals of all descriptions. Next, I would suggest, as of first importance, also, that a definite system of cross-breeding should be sustained with rams obtained from pure-blood stock. There is, I believe, some difference of opinion amongst flock-owners as to what countries the best rams are obtainable from; but experience has always proved this fact, that the merino ram, whether of European, South African, or Australian breed, is decidedly the best for crossing with Indian sheep.

As success has been obtained by crossing the merino rams of each one of these aforementioned countries with Indian sheep, the aim of flock-owners should be to obtain wools for clothing purposes of a finer quality. This could be accomplished, and some six different qualities be obtained which would work in combination or serve the special direct purposes of manufacture in general. With this end in view, I would suggest:

(1) For producing finest fibers of a felty character, a cross of one South African merino ram, pure bred, with 100 Bengal ewes.

(2) For producing uniformity of lengths of staple, medium fineness, soundness, and elasticity, a cross of an English merino ram, pure bred, with 100 Bengal ewes.

(3) For medium qualities and characteristics ranging between Nos. 1 and 2, a cross of one Australian merino ram, pure bred, with 100 Bengal ewes.

(4) For improvement from Indian stock rams for coarser wools and cloths, a cross with northwest part-bred merino rams, the result of crossings with European stock in years gone by. This crossing would give wool closely approaching the Agra wool, or wool used largely by the Cawnpore and Dhariwal mills, and also exported largely to Europe.

(5) I would advise a trial being made of crossing some Thibet ewes with an English merino ram, pure bred, and the rams obtained from this crossing should then be crossed with Bengal ewes. The effect, I believe, would be that a Bengal wool would be produced having a character distinctly its own, and a flannel and clothing wool also suitable for hosiery would be produced of an excellent character and high value.

(6) Combing wool of very long, fine staple, soundness, and elasticity, of a high value, for European combing machinery, would, I believe, be obtained by crossing Australian fine merino ewes, pure bred, with Thibet rams.

In connection with this matter of breeding are several important factors, such as the ascertaining of defects, pursuing a good system of selection or rejection, and subdivision of sheep into classes. These should be done regularly by a yearly inspection, so as to form correct opinion of the nature and properties of the fleece borne by each, in order that the defective

* Gypsum would, no doubt, be good manure for pasture land, but *beriwalla*s are not likely to use it.

sheep may be removed and never again allowed to mix with those drafted and set apart for the production of fine wool.

White-wooled sheep, free from gray or black, should be kept separate; black-wooled sheep, free from white or gray, should be kept separate; also the rams of same should be similarly kept separate with their flocks and not allowed to mix promiscuously. All party-colored sheep should be extirpated.

Kemp and hairy wool is very objectionable. Bengal wool is very kempy, that is, full of white, hairy, coarse bristles or hairs, which protrude and will not dye or become amenable to any process or operation of improvement. This, however, is the result of deterioration in all its forms and can only be eradicated by the carrying out of all such operations as are being suggested herein. If only a few kemps be seen in wool, it lowers its value immensely for clothing purposes. Good feeding, protection, and breeding will eradicate these objectionable features. Thus it is that changes in the fleeces of sheep are wrought by propagation or crossing of breeds possessing those qualities which it is wished to acquire.

Lord Western years ago recorded the effect of a union he made with one of his lordship's own merino tups and some East Indian ewes, on which a striking proof was exhibited of the influence of the male upon the progeny, the latter having a fleece infinitely superior to that of the dams. The ram was kept highly fed, and consequently their fleeces became long in fiber, heavy in weight, the breed of the ram being the merino, which is considered the best from which foreign stock can be improved. Purity of blood should be unquestionable, and the result will then be a stronger stamina, capable of standing changes of climate better.

It is, however, impossible, in the brief space of a report like this, to enter more fully into the minute details of sheep husbandry. I subjoin, however, a few extracts obtained from my library, which may be of interest in showing what has been done in the past in the other presidencies of India, and which I consider somewhat confirms by facts some of the suggestions herein made.

Before concluding, I might remark, from my present workings of the northwest of India wools, as compared with Bengal wools there is so decided a superiority of the northwest wools that I am obliged to use a large proportion to obtain more satisfaction from those who purchase our blankets and cloths, and I have no doubt in my own mind that this same superiority has been given to it by some such early action in the matter of breeding, etc., having been taken by the government of the northwest of India in the years gone by.

I am also convinced that Bengal could so improve its wools, and, if the system of cross-breeding was kept up continuously, might eventually supersede in character the wools of those provinces. I judge, also, from what I see of the northwest wools at present, there are signs in their wools now that the system of cross-breeding is not being kept up by continuous importations of fresh stock, a very desirable element to sustain and further improve their wools; this I would suggest Bengal should attend to continuously.

Extracts furnished by Mr. Orrah regarding early efforts in India to improve the breeds.

The Cape-bred merino rams have been found to answer for this country (India) better than those imported from England, so much so that Government have determined henceforth to import only from the Cape, as appears from the memorandum from Mr. Secretary Reid, in 1835.

The attention of Government was first directed at the end of 1835 to the improvement of the wool and sheep of western India. From the information furnished to Government it appears that many parts of the Deccan and Guzerat are very well adapted to sheep pasture, and that, if the wool of this country, which, though of a very inferior kind, finds a ready market, were improved by importing superior sheep, so as to improve the fleece of the country breed, the natives would be greatly benefited. Measures were accordingly adopted by Government to import sheep of a superior breed and in 1837 a supply of rams and ewes, about 106 in number, of the Southdown merino breed, were sent out at a very heavy expense by the hon-

orable court under the care of an experienced English shepherd. About 60 rams and ewes of the Saxon and merino breed were obtained from the Cape of Good Hope, where the breed is very fine.

A large supply of sheep (600) was also obtained, through the agency of Colonel Pottenger and Captain Burne, from Afghanistan and Cabul and the pastoral districts in the vicinity of the Indus. A small number sheep was also brought from Bassorah, as it is well known that the breed in that part of the country yields a very fine, lengthy fleece. The sheep obtained from England, the Cape, and Cabool have been distributed about the country, and many of them are intrusted to the care of gentlemen who understand the management of this animal and take an interest in the undertaking. A sheep farm was established at Ahmednuggur and another at the fort of Jooner, where the climate is good and pasturage plentiful, and these farms were intrusted to Mr. J. Webb, of the civil service, who had a good practical acquaintance with the management of sheep. The natives in the interior who breed sheep are supplied from these farms with half-bred lambs and were allowed to send their ewes to the Government. From the experience gained by these practicalists, it was found that the Cape-bred merino sheep were far superior to those bred in England and better adapted to the Indian climate, the English sheep being too large for the slight-made ewes of this country and are, moreover, greatly affected by the change in the climate. The Cape sheep are less affected by the climate and not so subject to disease as those of this country or of England, while their lambs are much stronger than those produced from the English sheep. It was therefore determined not to obtain any more supplies from England.

This enterprise on the part of the Government was noted by Sir George Arthur, who brought to the subject a valuable fund of information which he had acquired during his previous administration in New South Wales, and thus early declared himself a decided patron and supporter of improvements in Indian wool. When visiting the Government sheep farms of Ahmednuggur and Amraut Mahub he inspected the flocks, and in a minute drawn up on the occasion remarked that "an improvement in the breed of sheep, as regarded the views of Government, was not an object that at all had reference to profit, but one on which the authorities took the lead as being the best means of interesting industrious natives in the experiment." Sir George suggested the advantages which would be derived from establishing a more definite system in breeding, in the first place by carefully ascertaining the defect on the indigenous race and, this done, by steadily pursuing a good system of rejection and crossing. He at the same time adopted a fresh mode of pasturing and subdivision of the sheep in such a manner that no flock should exceed 700 head and recommended that, in order to encourage the natives to try the experiment, a given number of the improved sheep should be transferred to the native shepherds under an agreement to provide pasture and attendance, receiving in payment one-third of the produce, and so on.

Again, about a year later, Sir George Arthur, having occasion to visit Allegoom, where the Government flock had been collected by a previous arrangement with the superintendent, again inspected the stock, and in a minute written by himself and dated September 27, 1843, he expressed himself much pleased with the manifest improvements in the condition of the sheep, which were such as showed the care and attention paid to them by the superintendent, and the general appearance of the flock being greatly bettered by the removal of party-colored sheep, recommending, at the same time, that no relaxation in this system should be allowed, and urging that it would be proper in the next report from the farm to have the sale price of the wool compared with the ordinary country sheep distinctly noted. Sir George Arthur observed that, in order to insure success, it would be necessary annually to import a fresh stock of merino rams till the improved stock had thoroughly superseded the country one on the farm.

Captain Henderson, who acquired much information on the subject as a sheep-farmer at the Cape in 1836, submitted to the government of Bombay a paper of instructions on the management of merino sheep. In this treatise the captain states that on rearing these animals the diseases in India most to be guarded against are dysentery and mange. As a precaution

against the first, he says that dry pasturage is most essential, and, in order to prevent the mange, that great attention should be paid to the cleanliness of the sheep. A Patna ewe crossed with a Southdown ram was tried in Calcutta by a gentleman who had had considerable experience in the growth and cleaning of the staple in the Australian colonies, and he entered among the proceedings of the Agricultural and Horticultural Society of India the following results: The wool is decidedly of a very good quality for the first cross, uniting length of staple and softness with great uniformity of quality throughout the fleece, which is much desirable; the quality, from its coarseness, will not admit of it being used for other than blankets and very coarse cloth; its market value was, in the home market, 16*d.* per pound. He further states that Mr. Rickets, the owner, had acted correctly in having crossed Patna with the Southdown and should strongly recommend him to carry out the improvement by crossing the production with the merino, as he only requires now the texture, he having procured the length of staple with crosses. India can, in my opinion, if sufficient care were displayed in the crosses, produce as good a sample of wool as any of Her Majesty's dominions from the luxuriousness of feed and the temperature of the climate, as texture with length of staple is all that is necessary.

Colonel Hazelwood, in writing to Captain Jacob, of the Bombay artillery, dated Bangalore, 1837, says: "I have just received six more Saxon rams from the ruby flock of Sydney. Mr. Sullivan brought out two merino rams and two ewes, and I have seen the effect of crossing by these and also by Southdown rams imported by Sir William Rumbold on the Neilgherries. Even the red, hairy sheep of India become Southdown in size and wool in the second generation, and the white-wooled sheep of India become merino and Southdown in size and wool after one crossing. I have been shown Mr. Sullivan's merinos, which have been 2 years in India. After twice washing and shearing, the day after the ewes gave 5 or 4½ pounds each, in fineness, length of staple, elasticity, and oiliness equal to any I ever saw in Tasmania, where 2½ pounds is the utmost ever got from a ewe of the merino kind."

Since writing my report upon the wools of Bengal I have received by mail a copy of the weekly paper of the 14th of May, 1887, called the Wool and Textile Fabrics, which contains a report made by Mr. F. H. Bowman, D. S. C., F. R. S., an authority in England on technical matters upon Indian wools. I have therefore had a copy of the same written out, which I send to you with this letter:

"We take the following paper on colonial wools (by Mr. F. H. Bowman, D. S. C., F. R. S., etc., president of the Society of Dyers and Colorists) from the 'Report on the Colonial Sections of the Colonial and Indian Exhibition,' issued under the supervision of the Council of the Society of Arts and edited by the secretary of the society, H. Trueman Wood, esq., M. A.:

"The whole of the wools exhibited from India, except one or two incidental specimens, were confined to those contained in a case within the economic court. In speaking of them as wools, the term is used in its widest sense so as to include all goat and sheep fibers. The samples were twenty-three in number, and no reference appears to be made to them specially in the official catalogue. Few of these samples were named specifically, the largest portion being only distinguished by a number or letter without label. In character they covered a wide range of quality, from the very coarsest goats' hair down to the finest wool or pure *pashmina*, which is the undergrowth of the Thibetan shawl goat, as well as the native Indian wools, of which there are at least eight varieties. These wools are interesting, as they contain almost every variation in the individual fibers which is to be found in all other races of sheep. Most of the hairs and wools exhibited in this section, however, are of comparatively small interest to European manufacturers, because the export is small and the quality such that they can only be used for the coarsest class of goods, and, when worked by machinery, they require to be mixed with other wools. They are, however, of considerable importance in India as forming the staple of the woollen industry in the mountain districts, where the great bulk of the woollen goods is worn. Many of them are singular mixtures of coarse and fine fibers; so much so, that those who are only accustomed to the regular wools of cultivated sheep can hardly conceive it possible that many of the samples could be obtained from a single animal. The finest

specimen in quality and regularity of fiber and in all characteristics which are typical of the best wools can scarcely be surpassed; but by far the largest numbers of samples are defaced by irregularities in the structure and quality of the fiber, which are only to be found in the most neglected sheep in the United Kingdom and the colonies. To enumerate all the defects which are found in many of these wools, when compared with the highest standards attainable in the Australasian colonies, would be to mention all the defects to be found in any wool, and, indeed, many of the samples probably resemble the covering of the primitive sheep from which all the truly domesticated varieties are originally derived. Without further knowledge in regard to the place of origin, a mere classification of these wools would be of little service, and especially since the wools of India scarcely come within the scope of this report and will probably receive attention elsewhere.

“As already remarked, the wide range over which the growth of the wool extended and the difference in climate and other conditions to which the sheep in the various colonies were subjected rendered the present opportunity most valuable in making a comparative examination of the different wools. This survey brought home to the eye most forcibly the very wide range of conditions under which the sheep can be cultivated and the high state of perfection to which it can attain in almost every part of the world when due attention is paid to the culture and breed. It seems to indicate that special cases of sheep are more adapted to certain regions of the earth's surface than others, and that in many cases the environment of the sheep tends in the course of generations under careful management to produce a special character, which becomes permanent and may be retained as a pure breed. It also shows that certain characteristics of the wool, such as luster in the long-wooled breeds, can only be retained permanently by the reintroduction of fresh blood from time to time, at any rate in all the regions which lie nearest to the equator a certain degree of equality of temperature and atmospheric moisture being necessary for its permanence. Thus it appears to be retained longest in New Zealand and the southern coast of the Australian continent. The nature of the herbage also affects the quality of the wool in a marked degree, and probably one of the chief reasons why the Australian merinos deteriorate when introduced into Cape Colony is because the herbage is not fitted for the highest development of the sheep. One very marked lesson of the exhibition is the fact that all the best wools exhibited show that whatever tends to improve the character of the sheep in any one direction reacts all round in a benefit to all the other characteristics. The same conditions which tend to increase the size of the sheep cause the wool to be better nourished, firmer, and more tenacious, without injury to the best qualities of the fiber, provided care is taken in the proper selection and purity of breed in the sheep. The question of difference in the luster of the wool is an important one and opens a wide field for investigation. It has been already noticed that the Victorian wools stand foremost in this respect amongst the merinos. When the fibers are examined by a microscope, it appears that, while the fibers are equally fine when compared, say, with those from New South Wales or South Australia, the development of the individual scales on the surface is larger, and they present fewer scales in the linear inch. On the other hand, as the fineness in diameter is maintained in the less lustrous fibers and the development of the scales is greater in number, this gives a greater softness and pliability to the individual fibers, with a large degree of serration and therefore a higher felting power. It is for this reason, probably, that the wools of New South Wales are more adapted for fine clothing trade than the more lustrous Victorian or the coarser fiber wools of South Australia. The judicious introduction of the best characters of certain classes of sheep into other breeds, as is clearly shown, may induce a permanent improvement of the new breed only under certain conditions, and it seems now beyond a doubt that it will always be necessary for the farmer to discover the special class for which his own climate and surroundings are the most advantageous if he is to attain the highest perfection in the production of wool. Those who are growers of the wool must remember that every year the demand for quality in the raw material is greater, and those only who aim at securing all the best properties which wool can possess will secure the markets of the future.

"In several instances kemps were found associated with the wool. These kemps are fibers, usually shorter and thicker than the others, in which all traces of wool structure are absent. They are brittle, solid, and ivorylike. This is the sure indication of want of trueness in breed, and is most objectionable, as these kempy fibers will neither felt nor take any dye. They can not be removed from the fleece by any process, except picking them out, and hence they injure the quality of any goods for which the wool may be used. The defect was specially noticed in some of the cross-breeds with the long-wooled sheep, and where it exists the value of the wool is most seriously deteriorated.

"Nothing can compensate for the want of condition in the wool when sheep are neglected, and it can not be too strongly urged that every endeavor should be made to maintain in the bulk the high standard presented in the samples exhibited. Without this care and due attention to classification the results of good breeding and cultivation may all be lost and rendered commercially unremunerative.

"An endeavor was made in preparing this report by each specimen exhibited in relation to the geographical position in which it was grown to determine, if possible, whether any general law with regard to characteristic properties could be drawn from this relation, but the differences in the breed of sheep and in the care and attention bestowed on the wool rendered any sound deduction impossible, and it therefore appears probable the selection of breed, good pasturage, and attention have far more influence than mere geographical position within the range of the temperate zone."

From S. E. J. Clarke, esq., secretary of Bengal Chamber of Commerce, to M. Finucane, esq., C. S., dated Calcutta, the 28th of July, 1887.

I have only received your letters of the 21st and 27th instant, the former handing me two samples of ram's wool and ewe's wool from Thibet, of which you wish the value in Calcutta. The samples have been examined by the committee of the chamber of commerce, who direct me to send you the inclosed copies of letters written by Messrs. Peel, Jacob & Co., of this city, with reference to similar descriptions of wool sent to them from Darjeeling in the beginning of 1884. Such wool, say 30 to 40 maunds, was then valued in Calcutta at 18 rupees per maund. It was, however, subsequently sold to the Elgin Mills Company, of Cawnpore, for 25 rupees per maund.

Through the courtesy of Mr. J. L. Mackay, of Messrs. Mackinnon, Mackenzie & Co., I am able to supplement the information given by Messrs. Peel, Jacob & Co. by a London valuation report, dated May 18 of the current year, on the same samples of Thibetan wool sent home by Mr. Mackay's firm. The valuation given is from 6¼d. to 7d. per pound at the then current market rates. The Economist gives the price January to June, 1884, of unwashed wool at 7d. per pound. The value of wool similar to the samples you have now sent would be, probably, at that time 5d. to 5½d. per pound. The higher quotation given by Messrs. Buxton, Ronald & Co. in May last is owing to the rise in the price of wool which has taken place during the last 3 years.

Thibetan wool is not well known in this market, so that it is difficult to say what the demand for it would be.

The committee of the chamber of commerce desire me to say that they are of the opinion it would be advisable to send the samples * to the Elgin Mills Company, of Cawnpore, and also to the Egerton Woolen Mills Company (limited), at Dhariwal, Amritsir, from both of which concerns you would be likely to receive valuable and practical reports as to the quality of the wool and its suitability to their requirements. They would probably also be in a position to say what place it would take in the home market.

In conclusion, I am to say that, if you desire it, Mr. Mackay will be happy to send the samples home for valuation in London.† An early reply to this suggestion will oblige.

* This has been done.—M. F.

† I have requested Mr. Clarke to have this done.—M. F.

Report on wool samples referred to in Mr. Clarke's letter.

We have two samples of wool from you and value the first received at 5*d.* per pound and that last received at 5½*d.* per pound. The wool is unwashed and unassorted; it is well grown and is of a sound and healthy character. Such wool would sell in Europe in any quantity. Of similar wool from Bombay, Kurrachee, and Beyroot we sell 50,000,000 pounds annually. There is always a market for such wool at a price; at present the value of all carpet wools (that is carpet wool) is remarkably low. Please refer to the figures in the inclosed circulars about East India wool, which will govern this wool also. Those figures are for washed wool, assorted into various colors and qualities, and it might be advisable to trace a small lot of the wool you have in view in this manner and ship it to test this market. At the same time we would certainly suggest that 5 or 10 bales should be shipped in the natural state, and then we could report fully, and you would be prepared to act in the event of prices rising. It appears to us that the subject is one of great importance, for it is evident that the wool shown by your samples comes from a country perfectly adapted for the growth of a sound and healthy wool.

In Bombay and Kurrachee it is customary to assort and wash the wool before it is shipped, and this plan commends itself to our buyers. We send you samples of a parcel of Candahar wool, which was worth 5¾*d.* per pound in its original state as clipped from the sheep, and we give you the result in the assorted and marked washed state of this wool. We do not, however, know what the wool weighed before it was washed.

Class.	Weights.	Value.
	Pounds.	Pence.
No. 1 (white).....	12,000	11
No. 2 (white).....	1,700	7½
No. 3 (yellow).....	6,000	9
No. 4 (yellow pieces).....	2,500	6½
No. 5 (gray).....	1,200	5½

From Messrs. Buxton, Ronald & Co. to Messrs. Duncan, Macneill & Co., dated London, the 18th of May, 1887.

With reference to the sample of Thibet wool submitted to us this day for valuation, we beg to say we consider the wool worth from 6½*d.* to 7*d.* per pound at present market values.

From Messrs. Peel, Jacob & Co. to the secretary of the Bengal Chamber of Commerce, dated Calcutta, the 14th of January, 1884.

The sample of wool referred to in your letter of 8th instant is to hand, and we will endeavor to send you a valuation for it in a few days.

Our Liverpool correspondents, to whom we sent a sample of your wool, write us as follows:

"We find the present value is about 5*d.* for unwashed and say 9*d.* per pound if washed. It is recommended to be washed before shipment, and, if in addition the colors be assorted, each sort being, of course, packed separately, higher prices would be obtained. We understand there is usually a good demand for this article."

From Messrs. Peel, Jacob & Co. to the secretary of the Bengal Chamber of Commerce, dated Calcutta, the 25th of January, 1884.

We much regret we have been unable to send you any report on the last sample of wool sent us, as we have not received any communication so far from the Elgin mills, Cawnpore, to whom we sent it. We have now the pleasure to inclose a report on your earlier samples,

which we have received from our home correspondents, who have gone to some trouble in the matter, and we have sent you by post the five samples referred to therein. We inclose, for your further information, a Liverpool wool circular, details in which may be of interest to you. We would ask your careful consideration of the report, and would recommend you to make a trial shipment as suggested with the view of commencing a regular business.

From the Agri-Horticultural Society of India to the director of land records and agriculture, Bengal, dated the 30th of July, 1887.

I am now in a position to reply to your demiofficial No. 284 of the 21st instant, regarding two samples of wool from Thibet, ram and ewe. As mentioned in my previous note on this subject, there is very little trade done in wool in Calcutta, and the dealers in Thibetan wool amount to probably less than half a dozen in number. I have obtained the opinion of two of these traders on the samples. They consider they are good raw wools, but are very dirty, and their value would depend on the washing and cleaning they should receive before being put upon the market. In the present state the wool would be unsalable here. The final market for wool of good quality is Amritsir, and the price there for staple of the quality of the samples would be from 1 to 5 rupees per seer, according to the cleaning to which it has been subjected; it would there meet in competition Australian and European wools, which are imported via Bombay. Another market would be found at the mills in the North-west Provinces; but prices are not good there, as best qualities of wool are not sought after.

Of the two samples the ewe's wool is the better; the brown spots in it would, however, probably depreciate its value. From an European point of view, the samples would be much improved were the two qualities of wool of which they are each composed separated. The outer wool of the sheep is wiry and harsh as compared to the soft inner fleece, which is the more valuable. Should you desire it, I can obtain a more precise valuation from Bombay in a few days.

Letter from the agent of the Elgin Mills Company to the director of land records and agriculture, Bengal, dated Cawnpoor, the 16th of August, 1887.

With reference to your No. 327, dated the 3d instant, and the sample packets of ewe and ram's wool from Thibet, I have the pleasure to give the following particulars:

Quality.—A very good combing wool, with about 33 per cent. natural grease.

Value.—Can be purchased in the Cawnpoor market at from 23 to 25 rupees per maund.

We might, perhaps, be able to relieve you of a small quantity, but our consumption is only about 10,000 pounds.

Letter from the manager of Egerton Woolen Mills Company to the director of land records and agriculture, Bengal, No. F. 123 K., dated Dhariwal, Punjab, the 17th of August, 1887.

I have received two samples of wool you have been good enough to send me. I had a standing order with Mr. Prestage all last year to purchase 500 maunds of this wool at Darjeeling, but he entirely failed to procure for us some 50 maunds. This year I made a contract with another gentleman, and he, with the greatest difficulty, has succeeded in getting me 250 maunds. I can not say yet to what extent I should be likely to take this wool, as we get identically the same from Thibet through our part of the Himalayas, but it is certain that no single part of Thibet could possibly produce 10,000 maunds in a year, as that means the fleeces of over 200,000 sheep.

We gave 20 rupees a maund for our consignments delivered at Sealdah.

From the Agri-Horticultural Society of India to the Government of India, dated Calcutta, the 3d of January, 1887.

I have the honor to acknowledge your No. 262—7-23 F. & S., dated the 19th ultimo, which I had the honor of placing before a general meeting of the society, and I am directed in reply

to send you copy of a demiofficial letter from Babu Protapa Chundra Ghosha, reporting on the samples of wool which accompanied your letter.

Letter from Babu P. C. Ghosha, dated the 30th of December, 1887.

I have examined the six samples of Thibet wool sent by you, and I have got a Cashmere shawl merchant to examine and value the same. He declares sample No. 5 to be the best of the batch. Of black wool, the sample No. 3, though good in its way, is not so far superior to No. 6 as to justify the difference of 3 rupees in the maund. Just as I stated in my previous letter, a great deal depends upon the kind of carding and cleaning each sample receives before it is brought down to India for sale. As an extensive manufacturer of shawl and woollen goods both at Amritsir and Cashmere, he is of opinion that in purchasing large quantities the quality actually supplied is much inferior to the samples, and the difference of the quality of the sample and that of the goods in bales varies indirectly as the quantity of the sample and directly as that of the goods purchased. The smaller the quantity of sample the better it becomes by handling. There, however, can not be any question as to the quality of Thibet wool generally. They are superior in fineness and length of staple to any foreign wool brought to India. But one must not forget that the value of the wool, provided it be fine in texture, is regulated wholly and entirely by the degree of its cleanliness. Thibet wool is the only superior wool which is used by the shawl-makers, both in and out of India. As I said before, Rampoor and Yarkand are the two principal marts. But the supply is so uncertain and precarious and the prices so varying that it is quite difficult to form any idea on its export value. The wool-dealers of the frontiers are of opinion that India is a better market for such wool than any other country, and I think we ought to indorse the same.

From the notes on the samples sent, it will be found that a very limited supply of the six different samples is available :

Sample.	Maunds.	Sample.	Maunds.
No. 1.....	100	No. 5.....	25
No. 2.....	100	No. 6.....	200
No. 3.....	100	Total.....	2,525
No. 4.....	2,000		

The total available supply of all sorts was about 2,500 maunds. Of this total, about 2,000 maunds are consumed annually by the people of India in the way of blankets and coarse cloth manufactured in Sikkim, South Bootan, Gurhwal, Nepaul, Rampoor, and other hill places. The remainder, the better and finer quality, are all taken up by the shawl-manufacturers. The prices paid by them for wool of average quality I have already quoted in my previous note on wool. It would, therefore, be much desirable to so far facilitate the import of that article to India as would make the material available to all classes of wool manufacturers of the country for home consumption. Assam, Cachar, and the ten districts are the great places for woollen blankets which come from Thibet, through Sikkim.

As for the value of the samples in Calcutta market, I regret to have to report that there are no native purchasers for the same. I do not know whether the European manufacturers would care to get their wool from Thibet when they can get, perhaps at less cost, almost as good material from America, Australia, and Germany.

From the secretary of the Bengal Chamber of Commerce to the Government of India, No. 218-88, dated Calcutta, the 9th of March, 1888.

The committee of the chamber of commerce direct me to acknowledge your office No. 261-7-23 of the 19th of December, forwarding for valuation six samples of Thibetan wool received by your office from the director of land records and agriculture, Northwest Prov-

inces and Oudh, and calling for any remarks the chamber may have to make on the subject of a wool trade with Thibet.

In reply to the communication under acknowledgment, I am to say that the committee can add nothing to what was said in my letter of the 18th of November last. So long as the Thibetans are allowed to occupy a position within the Sikkim border, from which they can at will block the Jeylap-la-pass, the trade must necessarily depend upon their good will. This matter is, however, before the Government of India.

On the general subject of improving the wool trade of Bengal the committee will be glad to receive any further communications from you showing how the suggestions of Mr. Abbott and Mr. Orrah have been dealt with.

I now come to the valuation of the six samples of wool sent with your letter under reply and returned herewith. For the London prices now given the committee are indebted to the courtesy of Messrs. Mackinnon, Mackenzie & Co.

(1) Price per maund at Josimatti, 20 rupees the seer weighing 80 tolas; about 100 maunds can be purchased. London report—Gray, good quality (if greasy); probable value, $5\frac{1}{4}d.$ per pound.

(2) White wool; supply available, 100 maunds, the seer weighing 80 tolas; price at Josimatti, 20 rupees. London report—Cashmere, coarse white, $8\frac{3}{4}d.$ per pound.

(3) Black wool; available supply, 100 maunds; local price, 25 rupees per maund. London report—black, good quality (if washed), $7\frac{1}{2}d.$ per pound.

(4) White wool; available supply, 2,000 maunds; local price, 20 rupees per maund. London report—white, good quality (if washed), $6\frac{1}{2}d.$ to $7d.$ per pound.

(5) Good white wool; available supply, 25 maunds; local price, 40 rupees per maund. London report—Cashmere, white, fine, $10\frac{1}{2}d.$ per pound.

(6) Black wool; available supply, 200 maunds; local price, 22 rupees per maund. London report—dark gray (if washed), $6\frac{1}{2}d.$ to $7d.$ per pound. The report goes on to say: "Our brokers say it is difficult to value on such small samples, but they assume the bulk to be fairly represented and not loaded with sand. This should be guarded against, as we are told the natives put any rubbish up with their wool."

[Appendix.]

Table showing the price of wool in England, per stone of 24 pounds, since 1818.

Year.	Cheviot.				Highland.					
	Laid.		White.		Laid.		White.			
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>		
1818.....	40	0	to	42	2	20	0	to 22	6	
1819.....	21	0	to	22	0	10	0	to	10	3
1820.....	20	0	to	22	0	9	0	to	10	0
1821.....	18	0	to	20	0	9	0	to	10	0
1822.....	12	6	to	14	6	5	0	to	6	3
1823.....	9	0	to	10	6	5	0	to	5	9
1824.....	13	6	to	15	0	6	0	to	6	3
1825.....	10	6	to	22	0	10	0	to	10	6
1826.....	11	0	to	14	0	5	0	to	5	6
1827.....	11	0	to	14	0	5	6	to	6	9
1828.....	8	0	to	11	0	5	6	to	6	0
1829.....	8	6	to	11	0				4	3
1830.....	9	6	to	11	0	4	6	to	5	0
1831.....	17	0	to	20	0	7	6	to	8	6
1832.....	14	0	to	16	0	7	0	to	7	6
1833.....	18	0	to	20	7	10	0	to	11	0
1834.....	21	0	to	24	6	5	6	to	7	0

Table showing the price of wool in England, per stone of 24 pounds, since 1818—Continued.

Year.	Cheviot.				Highland.			
	Laid.		White.		Laid.		White.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1835.....	19 0	to 20 6	.....	.....	9 6	to 10 8	.....	.....
1836.....	21 0	to 25 0	.....	.....	10 0	to 14 0	.....	.....
1837.....	12 0	to 14 0	.....	.....	7 0	to 7 8	.....	.....
1838.....	19 0	to 22 6	.....	.....	6 0	to 10 0	.....	.....
1839.....	18 0	to 20 0	.....	.....	8 0	to 12 0	.....	.....
1840.....	.....	.....	.....	.....	.....	7 0	.....	.....
1841.....	15 0	to 16 9	.....	.....	6 0	to 7 5	.....	.....
1842.....	12 6	to 14 0	.....	.....	(*)	.....	.....	.....
1843.....	9 0	to 11 6	.....	.....	5 0	to 6 0	.....	.....
1844.....	15 0	to 18 0	.....	.....	(*)	.....	.....	.....
1845.....	14 6	to 17 6	.....	.....	7 6	to 8 6	.....	.....
1846.....	12 0	to 14 6	.....	.....	8 0	to 8 6	.....	.....
1847.....	12 6	to 14 0	.....	.....	(*)	.....	.....	.....
1848.....	9 6	to 11 0	.....	.....	.....	4 9	.....	.....
1849.....	12 0	to 16 6	.....	.....	6 0	to 6 3	.....	.....
1850.....	15 0	to 17 6	.....	.....	8 0	to 8 6	.....	.....
1851.....	12 0	to 16 0	.....	.....	8 0	to 9 3	.....	.....
1852.....	13 0	to 15 0	.....	.....	8 0	to 9 0	.....	.....
1853.....	19 0	to 22 0	.....	.....	11 0	to 12 6	.....	.....
1854.....	12 0	to 15 0	.....	.....	7 6	to 8 6	.....	.....
1855.....	14 6	to 19 0	.....	.....	8 6	to 9 0	.....	.....
1856.....	19 0	to 21 6	.....	.....	.....	11 0	.....	.....
1857.....	19 0	to 24 0	.....	.....	13 0	to 14 3	.....	.....
1858.....	15 0	to 17 0	.....	.....	8 9	to 10 0	.....	.....
1859.....	18 6	to 24 0	.....	.....	10 9	to 11 6	.....	.....
1860.....	22 0	to 32 0	37 0	to 38 0	10 0	to 11 3	.....	.....
1861.....	19 6	to 27 0	(†)	.....	(*)	.....	.....	.....
1862.....	18 6	to 26 0	30 0	to 37 0	11 6	to 16 0	.....	.....
1863.....	25 6	to 31 0	38 0	to 42 0	15 3	to 17 6	.....	.....
1864.....	31 0	to 39 0	47 0	to 54 0	17 6	to 20 0	.....	.....
1865.....	23 0	to 30 0	44 0	to 45 0	15 0	to 17 0	.....	.....
1866.....	24 0	to 36 0	30 0	to 38 0	14 0	to 16 0	.....	.....
1867.....	16 0	to 21 6	(*)	.....	(*)	.....	.....	.....
1868.....	19 0	to 26 0	28 6	to 32 0	8 6	to 9 0	.....	.....
1869.....	18 0	to 26 6	(*)	.....	8 6	to 10 0	.....	.....
1870.....	15 0	to 23 6	25 0	to 26 0	.....	9 6	.....	.....
1871.....	20 0	to 26 6	30 0	to 34 6	12 0	to 15 0	.....	.....
1872.....	26 0	to 37 6	40 0	to 48 0	18 0	to 21 0	.....	.....
1873.....	17 0	to 18 0	34 0	to 40 0	9 0	to 12 0	.....	.....
1874.....	18 6	to 26 6	30 0	to 34 0	9 6	to 13 0	.....	.....
1875.....	25 0	to 32 0	34 6	to 36 0	12 6	to 16 0	.....	.....
1876.....	20 0	to 24 0	30 0	to 34 6	9 6	to 12 0	.....	.....
1877.....	20 9	to 26 0	28 0	to 30 0	10 0	to 12 0	.....	.....
1878.....	18 9	to 25 0	27 0	to 32 0	8 6	to 11 6	.....	.....
1879.....	15 0	to 17 0	(†)	.....	.....	7 0	.....	.....
1880.....	20 0	to 24 0	30 0	to 32 0	10 6	to 11 6	14 0	to 15 0
1881.....	17 0	to 21 0	27 0	to 30 0	5 0	to 9 6	12 0	to 13 0
1882.....	14 0	to 18 0	27 6	to 28 0	7 6	to 9 6	13 0	to 14 0
1883.....	13 0	to 18 0	26 0	to 28 0	6 6	to 8 6	11 6	to 12 6
1884.....	13 0	to 18 0	26 0	to 28 0	6 6	to 8 6	11 6	to 12 6
1885.....	12 0	to 17 0	22 6	to 26 0	6 0	to 8 0	11 6	to 12 0
1886.....	13 0	to 18 0	23 0	to 27 6	6 6	to 8 6	11 6	to 12 0
1887.....	14 0	to 22 0	23 0	to 28 0	7 0	to 9 0	11 6	to 13 0

* Not quoted.

† From 30s. upwards.

‡ Prices very low.

No. 127—8.

SHEEP AND WOOL IN INDIA.

REPORT BY CONSUL MOREY, OF CEYLON.

I have to report that sheep are not bred here to any extent, nor are there any local wool manufactures.

Most of the sheep for mutton are imported from the Coromandel coast of India, the animals not being wool-bearing, but having hairy coats like goats.

The wool-producing sheep of India, so far as my knowledge extends, are found mostly in Cashmere, Afghanistan, Beloochistan, and the northwestern provinces of Hindostan generally. Bengal also produces sheep, but the wool is mostly coarse, hairy, and poor.

The most beautiful fabrics in the world are made from wool in India, and have been so made from time immemorial. For instance, in the matter of shawls, any admixture of silk even with the wool detracts seriously from the value of the article.

Of course, these remarks are merely cursory, and, so far as they refer to India, are, perhaps, beyond my province.

The following newspaper extract, commenting on the opening of the first wool mill in the Bombay presidency in June last, may prove interesting, and doubtless the consul-general at Calcutta and his colleague in Bombay will be able to afford the Government all the information desired on the interesting subject:

A NEW INDUSTRY IN BOMBAY.

[From the Bombay Gazette.]

The manufacture of woollen goods is one of the most recent additions to local industry. Only a little more than a year ago a company calling themselves the Bombay Woollen Manufacturing Company was established for opening a wool mill in Bombay. In the month of June last their mill near Dadur, the first wool mill in the presidency of Bombay, was opened for work. Three experts were brought out from England to superintend the different departments—one for the dyeing and finishing, another for the spinning, and the third for the weaving. In the month of August work was begun in earnest.

W. MOREY,
Consul.

UNITED STATES CONSULATE,
Colombo, Ceylon, October 27, 1890.

SHEEP AND WOOL IN PALESTINE.

REPORT BY VICE-CONSUL CLARK, OF JERUSALEM.

The locations in which the sheep are kept are Gaza, Nabloos, and the most in Hebron, which are brought to Hebron from the Moabite countries by the Bedouins, and the whole area being about 2,000 square miles.

The number kept in flocks is from 500 to 800, and the total number of sheep in each province is as follows; Gaza, 2,000; Nabloos, 3,000; and

Hebron, 5,000. No distinctions exist; all are of the same kind, called the Barbary broad-tailed sheep.

The sheep in this country are shorn in spring in the most primitive manner, and the largest quantity of wool is sent to Jaffa, whence it is shipped to Smyrna, and there, after being mixed with better qualities of Asiatic wool, it is marketed. The wool exported is never washed or cleaned, but that used by the peasants for weaving and for the native families is washed in a common way.

As the whole of the wool of this country is shipped to Smyrna, where it is made up for market, we have no grades of wool or names for such.

The clip of 1889 amounted to about 350 cantars (210,000 pounds), while that of the year 1890 is about 300 cantars (180,000 pounds). I inclose a sample of three different parts of the fleece.

As to the local manufactories, there are none, only a few looms in the district of Gaza, where they weave a few hundred peasants' coats, or *abbais*, for local use.

HERBERT CLARK,
Vice-Consul.

UNITED STATES CONSULATE,
Jerusalem, December 15, 1890.

SHEEP IN ARABIA.

REPORT BY CONSUL JONES, OF ADEN.

There are no wool sheep to be found within a radius of 300 miles from Aden. The sheep of Arabia (Adenwards) are of bastard breed and have a covering of short, wooly hair. No use has ever been made of the sheep hair, it being left on the animal.

I have to advise that the only area of Arabia within which any considerable quantity of wool-bearing sheep are to be found is along the rivers Tigris and Euphrates, in Mesopotamia, in latitude 30° to 36° north, longitude 42° to 48° east. The cities of Bagdad and Bassorah are the main ports of export.

JOS. A. JONES,
Consul.

UNITED STATES CONSULATE,
Aden, October 29, 1890.

SHEEP IN JAPAN.

OSAKA.

REPORT BY CONSUL SMITHERS.

Sheep are not kept in my consular district, except to a very limited extent. This is owing to the prevalence in the country of bamboo grass, which produces the scours in the sheep, and from which they shortly waste away

and die. It is only by destroying the natural turf and sowing foreign grass seed that suitable pasture can be obtained. An attempt has lately been made to introduce sheep in the province of Yezo by the Government Agricultural College at Sapporo, but with what success I am unable to learn.

E. J. SMITHERS,

UNITED STATES CONSULATE,

Consul.

Osaka and Hiogo, November 10, 1890.

NAGASAKI.

REPORT BY CONSUL ABERCROMBIE.

Although many attempts have been made, owing to peculiarities in pasturage it has been found impossible to raise sheep within this consular district, all experiments with sheep imported from China resulting in failure.

W. H. ABERCROMBIE,

Consul.

UNITED STATES CONSULATE,

Nagasaki, October 27, 1890.

KANAGAWA.

REPORT BY VICE-CONSUL-GENERAL SCIDMORE.

Several attempts have been made by the Japanese Government upon its experimental farms to introduce sheep-rearing and breeding, but, owing to the peculiarities of the climate and pasturage of the country, such efforts have been almost invariably attended with failure, and I believe all attempts in this direction have been abandoned.

The mutton consumed here is brought from China. Its consumption is almost entirely confined to the foreign residents in the treaty ports.

Wool and woollen manufactures are imported. During the year 1889, for which the latest complete statistics are available, raw wool was imported into this port to the value of 282,171.14 yen.* Woollen yarn was imported to the value of 148,927.85 yen, and woollen manufactures were imported to value of 3,897,308.81 yen. Nearly all the raw wool came from Australia, the woollen yarn from Germany, and woollen manufactures from Great Britain, France, and Germany. The United States only furnished woollen manufactures to the value of 6,957.38 yen. The Japanese have, to a certain extent, made use of imported yarns for manufactures of textiles; but, I am led to believe, these manufacturing ventures have not been, in the majority of cases, profitable.

G. W. SCIDMORE,

Vice-Consul-General.

UNITED STATES CONSULATE-GENERAL,

Kanagawa, January 28, 1891.

* During 1889 the average value of the yen was 75 cents.

SHEEP AND WOOL IN CHINA.

NINGPO.

*REPORT BY CONSUL FOWLER, OF NINGPO.**

The consular district of Ningpo embraces the whole of the province of Che-Kiang, occupying a central position with reference to the rest of China, and has a population variously estimated from 25,000,000 to 35,000,000 people. The area of this province is 39,150 square miles, and is therefore equal in size to the Kingdom of Portugal and twice as large as Denmark.

Sheep are raised in limited numbers in but few sections of this vast territory. Hoo-Chou, in the northwest corner, seems to have more sheep than any other section of this province. Here they are kept in flocks, rarely, if ever, exceeding 100 to the flock. On the great plain north of Hang-Chow-Foo, the capital of the province, the farmers keep a few—2 or 3, sometimes 7 or 8. These are kept in confinement, and the last crop of the mulberry leaves is gathered and fed to them during the autumn and winter; rice straw also furnishes food.

In the rest of the province, on account of the pasturage, sheep are rarely seen and in some parts are not known. In Hang-Chow-Foo, it is claimed, 100,000 sheep are slaughtered annually for food, but, perhaps, half that number would be nearer the mark, while in all the villages to the north sheep can be found. About 12,000 pounds of wool are sold annually in Hang-Chow-Foo, principally to Canton Chinamen.

In gathering the wool the natives shear the sheep; in butchering they do not, as a rule, skin the animal, but scald it and take off the wool as we do the hair of pigs. This wool is then dried and used, but most of the wool from this section is sold in the "dirt." The Chinese do not spin nor weave woollen fabrics. They use the wool in four ways:

- (1) As manure (not very commonly).
- (2) They turn the skin of the animal with the wool on, and line their garments with this fur.
- (3) With the coarser wool they make pens, or, as we would call them, brushes, for writing purposes.
- (4) The largest use at Hang-Chow-Foo is to make a very coarse felt, which, being made in large pieces, is used as a cover for tailors' tables; also as a cloth to kneel on in certain ceremonies of ancestral and idolatrous worship.

Wool in China is simply called "sheep's hair." While sheep, in the neighborhood of Hang-Chow-Foo and the coast ports, may be obtained in large quantities—in fact, are a staple article of food—not a pound of mutton can be had 120 miles to the north, and, although it is sometimes used as a fertilizer, yet in some parts of this same district, especially near Kin-wha (in this

* The Consul acknowledges his indebtedness to the Rev. R. V. Lancaster, of the American Presbyterian mission at Hang-Chow-Foo, for the greater portion of the information contained in this report.

district), wool is so scarce that the boatmen in winter wear stockings made of human hair. The Chinese do not attempt to explain this. Rev. R. V. Lancaster, an American missionary, gives as a possible explanation that in Hang-Chow-Foo there is a colony or church of Mohammedans with a large mosque, and they, eating mutton, have taught the other Chinese.

Sheep in this district are kept only for food, not for the wool. The variety of sheep which alone is seen here is the bent-nose, broad-tailed variety; the tail is a lump of fat, sometimes weighing 2 pounds or more.

Sheep are mentioned in the earliest books of the Chinese. Confucius makes mention of them in "Analects, book 3, chapter 17:"

Tsze Kung wished to do away with the offering of a sheep connected with the inauguration of the first day of each month. The master said: "Tsze, you love the sheep; I love the ceremony."

The Emperor in the last month of the year gave out to the princes a calendar for the first days of the 12 months of the year ensuing. This was kept in their ancestral temples, and on the first of each month they offered a sheep and announced the day, requesting sanction for the duties of the month.

Another interesting point is that, while the sons of hog-butchers, along with the sons of harlots and some others, are denied the privilege of competing at the literary examinations, no such disability attaches to sheep-butchers. Of this the Chinese give no explanation. This reminds one of the Jewish distinctions. Again, it is the felt made of sheep's wool that is knelt on at the temples.

Owing to the fact that the Chinese keep few or no statistics, it is next to impossible to obtain any data that would be reliable, and on this account it would be better not to give any estimate of the number of sheep in this district, as it would be but sheer guess work.

I inclose herewith two samples of wool clipped at Hang-Chow-Foo, and also a sample of felt; the red color is used in devotional exercises, the white for tailors' benches.

JOHN FOWLER,
Consul.

UNITED STATES CONSULATE,
Ningpo, January 28, 1891.

FOO-CHOW.

REPORT BY CONSUL GRACEY.

There are no sheep raised or kept in this province; they can not live here. Efforts have been made to raise them for the tables of the foreign population, and for this purpose sheep have been brought from Shanghai; but, soon after their being brought here, they begin to decline and soon die off. All that we use on our tables now is sent, ready dressed, from Shanghai.

No domestic wools of any kind are manufactured in this province. The natives use but very little manufactured woolen goods. There is a small

trade in skins with the wool upon them carried on with the northern provinces, which the natives make into outer garments to be worn in the coldest season of the year, but not enough to be regarded as of any commercial value.

SAMUEL L. GRACEY,
Consul.

UNITED STATES CONSULATE,
Foo-Chow, November 29, 1890.

THE MALAY GOLD MINES.

REPORT BY CONSUL WILDMAN, OF SINGAPORE.

On September 22, 1890, I gave the Department some details in regard to the newly opened gold field at Raub, province of Pahang, Malay Peninsula, and cited the result of the first crushing of ore. On the 27th of December, 1890, the following telegram was received from the superintendent by the local secretary of the Raub-Australian Syndicate (limited), in this city:

KWALA KUBU, *December 27, 1890.*

Crushing finished. Four hundred and ninety tons stone yielded 760 ounces smelted gold. Left to-day with gold for Singapore via Salangore.

BIBBY.

The above return does not average out as high as the previous one, but it is stated that the fact arises, not from any diminution in the quantity of ore, but rather from the vein running through some former Chinese diggings. The complete output of the Raub mine is at present about \$30,000 in gold.

Mr. Bibby, the superintendent, called on me to obtain data in regard to process of mining by electricity in my own State (Idaho). In conversation he informed me that the development of gold in the Malay Peninsula was but a question of a few months, and that their greatest drawback at present was a scarcity of experienced miners; that, with a corps of American miners to direct the Chinese coolies in the building of timber shoots and in the handling of the ore to the best advantage, the work could be pushed to a rapid financial success.

He further stated that the ground was of a soft shale formation, with plenty of fuel and water at hand.

They are now figuring with American firms for a 100-stamp mill, water wheel, and electrical machinery, and hope therewith to open a section of country that will compare favorably with the old gold fields of the United States and Australia.

ROUNSEVELLE WILDMAN,
Consul.

UNITED STATES CONSULATE,
Singapore, January 19, 1891.

THE STATE OF TAMAULIPAS.

REPORT BY CONSUL RICHARDSON, OF MATAMOROS.

AGRICULTURE.

There are in this district no meats, cereals, fruits, or vegetables that are entering into competition with American productions. Just now there is no attempt at competition in the matter of live stock, and the cereals are imported rather than exported.

In former consular reports from this place all has been written that can be about agriculture until suitable statistics are gathered. No one now knows the area of the principal crops nor the aggregate yield. Everyone knows the exceeding fertility of the soil and the adaptability of the climate to most of the products of the temperate and torrid zones. There can be no soil anywhere better than that which is found throughout the entire State of Tamaulipas, but it has been permitted to lie fallow year in and year out.

The people are, however, turning their attention toward the acquisition of property, and they are understanding more fully than ever that they are no longer altogether dependent on rains for any given crop. Streams are more numerous in this State than any other State in Mexico and have been waiting for centuries to be turned into irrigating ditches. The more enterprising are now earnestly discussing irrigation, and this discussion is assuming practical form. Efforts have been made, but with poor success, in the direction of damming the San Juan River above Camargo. A more extensive scheme is on foot to distribute the waters of the Rio Grande throughout this valley. This scheme, if carried out, will unlock the treasures of this valley and give the people something which will make their trade more valuable.

This year has been disastrous for the rancheros, owing to the unprecedented drought. The staple crops, such as corn, cotton, and beans, are almost wholly cut off. Some cane plantations along the river that have been cared for are giving a fair yield. A trip to Brulay's sugar plantation and refinery, on the Texas side of the Rio Grande, revealed to me just what irrigation will do. It is the opinion of Mr. Brulay that there is no method of watering for this soil that equals nature's. He gets the best results when rains are frequent, but is sanguine that cane-growing, with irrigation and under the bounty system, can be made very profitable. Under the burning sun of this latitude and inadequate cultivation the soil, especially after irrigation, becomes baked hard, and the planters and farmers, like so many of their brethren in the United States, have not learned the important lesson that the best substitute for water is a frequent stirring of the soil about the roots of the plant, as, indeed, it is a necessary accompaniment of water. The sugar crop this year on this plantation is lighter than last year's, and, I think, for the reason which I have given—a lack of cultivation. From limited observations, I would say that there has been no material advance in the use of agri-

cultural implements. Whatever advance there has been is in the increased use of our American productions.

The live stock industry is flat. There has been apparently no attempt at improvement in grade, nor will there be for some time. Blooded and "scrub" stock are alike comparatively valueless. It does not occur to the Mexican that improved stock is any more valuable for home uses. It is still quite impossible to distinguish the Mexican hog from a goat at the distance of a few rods; save in the more rapid locomotion of the former. It is said that horses were unknown in Mexico till a few Arabian horses were brought in by the Spanish. The Mexican horse, then, is Arabian. It is assumed that no improvements can be made in that stock. The Mexican ox bears some resemblance to the American ox of Texas descent. The wool produced in this State is meager in quantity and poor in quality.

Some attempts at raising cotton and cane have been made with good success. Judging from the invoices that are acknowledged in this office, the only traffic that seems to have any life in it is the traffic in bones, skins, and hair. There will never be anything more definite or satisfactory to report in respect to agriculture and kindred industries until the laws affecting the residence of foreigners and their acquisition of real estate are repealed and an intelligent and systematic endeavor made to test the capabilities of this soil. Mexico is certainly in a hopeful condition. It has a forward and expectant look, and when capital comes to the rescue existing laws and institutions, which have been such a barrier to help from the outside, will give way, and the world will begin to know the wealth that lies concealed in her mountains and valleys.

SANITARY CONDITIONS.

There seems to have been a widespread impression that the region of the lower Rio Grande and the coast of Tamaulipas is unpleasant and unhealthful. I doubt whether any climate in this latitude (from 24° to 27° north) and at this altitude is more salubrious. There is no paradise on earth, nor is there any climate so bad that it does not have its compensating features. Suddenness of change in temperature and its humidity is its main infelicitous feature, and here, doubtless, we have the cause, so far as climate can be a cause, of the prevailing lung diseases; but this same cause is found through the interior of the United States from the Dakotas to Mexico and the Gulf, and, if it be true—which I can not concede—that there are more lung diseases here than in the belt of our country to which I have referred, we may account for them on purely physical and hygienic grounds. When deaths which may be attributed to these causes are eliminated, it will be found that the major part of the remainder occur in first and second childhood. From July 1 to December 1, 1890, there were in the city of Matamoros 114 deaths. Of these 24 were infants and very old people. The infant mortality is due in large measure to inadequate parentage and ignorant midwifery; 19 died from smallpox, which, under proper sanitation, might be entirely eradicated; 25 from brain diseases, "in large measure," says a physician of wide expe-

rience and long residence in Matamoros, "due to fast living;" and so from consumption. These cases of consumption are found among those people who inherited enfeebled constitutions, who spent their inheritance, and then evidently expected to conduct their daily lives in utter disregard of the most commonplace rules of hygiene without paying the penalty. Of course, it is undeniable that the sudden and spiteful changes of temperature make lung diseases common, but they are made much more common from purely human causes. I find, however, resident foreigners here and across the Rio Grande, in Brownsville, speaking in enthusiastic terms of the climate—even those who have resided here long enough to become fully acquainted with its shortcomings.

BANKS AND CURRENCY.

Coming, as I have, from the United States, where banks are necessary in every business community, I have been impressed not so much with the lack of banking institutions as the inability to perceive their utility. I am more amazed that the city of Brownsville, Tex., with its population of about 6,000, should have continued up to this time without banking facilities. Every man is his own banker, having his own place for concealment of coin or a safe that can be pried open with stout fingers and trusting to chance purchases of exchange or to transshipment of coin. It would seem that the recent robbery of the steamer train on the Rio Grande Railway would suggest the importance of a more expeditious and safe method of exchange, but I have not been able to perceive any increased desire for it. There are a few banks in the Republic, and they are profitable. There is, then, no inherent impossibility or impracticability in the Mexican system. Drafts on London, New York, or even the city of Mexico are often scarce or at exorbitant premiums. Interest is usually about 1 per cent. per month, and money on good security is not always easy to get at that rate. Legal interest in the State of Tamaulipas, when no interest is agreed upon, is 6 per cent., and all above 12 per cent. is regarded as usury.

There is no question in the minds of intelligent people here in regard to the need of banking institutions, nor in regard to their ultimate, if not immediate, profitableness. Yet the conservative instinct is so strong that it is quite impossible for them to make any advance, even though clear as to the wisdom of it. There are openings for banks in every city in the Republic to the banker who has the patience and tact to enter upon and pass through the necessary stage of preliminary education.

RAILROADS.

Mexican railroads have been made the frequent subject of consular reports. They are a most necessary and interesting feature in the development of Mexico. To them more than any agency is due the fact that revolutions, at least of the kind to which Mexico has been addicted, are things of the past. The State of Tamaulipas has enjoyed large promises and so far little realization, and it is a State where railroad construction is easy, where returns

from agricultural developments would be the quickest and most profitable, and a State that must be traversed by the shortest line from the centers of population in the United States to the city of Mexico and southward.

In the year 1881 the original concession for building the Mexican Southern Railway was granted. The northern division was to begin at Nuevo Laredo, at the extreme north of this State, following the course of the Rio Grande to Mier, with the privilege of constructing a branch from Mier to Matamoros, then southward via China and Victoria and crossing the southern boundary of the State at a point about 45 miles from Tampico, on the Rio Paunco River. This road, which would have traversed the entire State of Tamaulipas, opening up its richest regions and connecting with the sea-coast at Brazos and Tampico, was graded 100 miles south from Nuevo Laredo and abandoned. There are no present prospects of its resurrection.

The Matamoros and Monterey Railroad, which promised to secure the trade of northern Tamaulipas and that which centers at Nuevo Laredo for Matamoros, was constructed from this place along the Rio Grande about 90 miles, where it stopped among the cactuses and mesquite near the little hamlet of San Miguel. This road is now owned and operated by the Mexican National, which betrays no purpose to push it further. While mixed trains run over it every other day, it is of very little present service in developing trade. It is popularly understood that this branch of the National Road is discriminated against by the railroad company in favor of the Texas and Mexican branch, which was constructed in the interest of Corpus Christi, Tex.

The Matamoros, Linares, and Matchuala Railroad, which promises to make Matamoros the port of entry for a large and productive portion of the interior and the possible eastern terminus of a transcontinental line, is completed for about 25 kilometres and work suspended awaiting more money and another contract.

The Matamoros and Victoria Railroad, with extension to San Luis Potosi, popularly known as the "Cuellar concession," was modestly inaugurated a few months ago, and construction is going on effectively. It will doubtless be completed to Victoria at an early day, thus reducing a round trip to the capital from 14 days to 2 days. The action of the Mexican Congress just before its adjournment in December last, making payable its subvention after the building of every 25 kilometres, renders its completion possible. There are many local reasons for considering this road the most hopeful of all.

In 1889 a concession, known as the "San Roman," was granted to the Continental Railroad Company, connecting Matamoros and the north with Guatemala on the south. This road is at present entirely on paper, but its friends seem assured of its ultimate construction and operation.

I have made no mention of roads connecting Brownsville with different points in Texas. There are said to be five projected, one of which, the Corpus Christi and South American, is in process of construction, though much embarrassed by the present stringency at money centers. The real key to any railway communication with central points in Texas is the build-

ing of some road south or west from here that will tap the resources of the State of Tamaulipas and interior. There seems to be no lack of railroads on paper. The air is full of promises—promises that must, in substantial measure, be realized. The fact that many roads have been projected is full of significance and hope. This old Mexican city, with its past rich historical and commercial interest, will not be passed by, though at present there is anything but confidence among business men.

The one mistake that appears to have no justification was the failure to complete the Matamoras and Monterey Road to Monterey. This error on the part of the present management is another illustration of the folly of attempting to operate against natural law. Corpus Christi never was a trading point for any part of Mexico. All northern Mexico found its outlet to the sea at Matamoras as naturally as the waters of the Rio Grande. Matamoras is the key to the river trade. A railroad from here to Monterey would pass through the rich and populous towns of Reynosa, Camargo, Cerralvo, with Mier and Guerrero, in Mexico, and Edinburg, Rio Grande City, and Roma, in Texas, as tributaries. It would pass through a fertile region. The Texas-Mexican branch of the Mexican National, connecting Corpus Christi and Laredo, for which the Matamoras and Monterey was sacrificed, passes through a desert region, and is only maintained at a great and constant loss, the little Matamoras division, which is not even permitted to have the monopoly of transportation to Camargo, contributing from its earnings to run its expensive rival. The attempt to make Monterey, which is the great distributing point for northern Mexico, tributary to Corpus Christi results in the building of the Monterey and Mexican Gulf Railroad through to Tampico, thus forcing the seaboard trade of northern Mexico away from both lines of the Mexican National. Mexico prefers to build up her own cities, and she will now give to Tampico what was sought to be diverted from Matamoras to Corpus Christi.

DECLARED VALUE OF EXPORTS.

I have inclosed a comparative table of exports. This table is doubly comparative. It shows the value of exports for the fiscal years ended June 30, 1888, 1889, and 1890, and for the half year ended December 31, 1890, and this exhibit is made from both the books of the Brazos de Santiago customs district and the invoice book of this consular district. These two districts are so nearly identical that comparison can easily be made. A difference in declared values will be seen, which may be accounted for in incidental differences of exchange, the value of goods bought in Matamoras and not subject to invoice, and the reduction in live stock after being invoiced at consulate and before entry at custom-house. The collector of customs at Brownsville has never required an invoice of Mexican coin, so it never appears in the invoice book of the consulate. The 6 months ended December 31, 1890, indicate a large falling off in exports. One-half of this deficit is due to the cessation of traffic in live stock. The other half is due, in some measure, to the prolonged and unprecedentedly disastrous drought, in some

measure to severe conditions imposed upon trade, but it is more largely indicative of a real decline in business at this point. It is thought by some careful observers, and hoped by all, that trade will not go below the figures indicated in the half-year exhibit for 1890.

Table showing the value of declared exports from the consular district of Matamoros for the fiscal years ended June 30, 1888, 1889, and 1890; and also the half year ended December 31, 1890.

Description.	According to custom-house books.	According to invoice book.
Fiscal year ended June 30, 1888 :		
Merchandise	\$329,703.00	\$307,885.54
Mexican silver coin.....	175,959.00	
Total.....	505,662.00	
Fiscal year ended June 30, 1889 :		
Merchandise	362,808.00	370,101.31
Mexican silver coin.....	133,704.00	
Total.....	496,512.00	
Fiscal year ended June 30, 1890:		
Merchandise	330,684.00	325,940.69
Mexican silver coin.....	165,879.00	
Total.....	496,563.00	
Six months ended December 31, 1890 (merchandise).....	99,189.00	81,185.17

The above values are expressed in United States currency at rates of exchange fixed by the Secretary of the Treasury.

OUR PRESENT TRADE WITH MEXICO.

Mr. Sutton, in his report from this place bearing date of October 16, 1880, says:

If the American merchant is desirous of entering into the Mexican trade, it is necessary that the work shall be carefully studied and then pushed steadily, a thing which the American merchant does not seem to realize, for at least some American dealers have spells of enthusiasm and relapses of indifference regarding the export trade of Mexico.

This characterization of American trade and traders in Mexico 10 years ago is referred to just now as characteristic of our American policy. If we would command the markets of Mexico, there should at least appear to be a consistency of policy and legislation that will give assurance and hope to Mexicans who are partial to us and to any among Americans who may feel inclined to exercise the care and patience requisite to turn trade from the channels in which it has been long running. Ease of access to Mexico is not merely a matter of transportation nor of a mutually low tariff; it is largely a question of disposition and favorable inclination. It should be our policy, if we would secure the foothold which European manufacturers and merchants appear to have, to secure Mexican good will and encourage frequent commercial incursions from one country to the other. Mexican

confidence and favorable inclination we have not enjoyed in the past, nor do we enjoy it now as fully as we ought that our trade may have the preference.

Another and apparently very great impediment to our increasing trade with Mexico, if I may use the expression, is the lack of American enterprise. In the opinion of most men that I meet the main reason why American merchants do not control the market for which they compete is their remarkable indisposition to meet the demands of Mexican trade in quality as well as quantity and to conform to its existing conditions. We are willing to give them what we want, but not what they want. English, French, and German merchants do not rely upon the drummers with headquarters at home. Branch houses or agencies are established and every endeavor made to cater to the needs, tastes, and even whims of the people. The import trade in many most important lines is really no longer in the power of Mexico to give. It is in the hands of European merchants who have their branch houses here which are apparently Mexican, who have identified themselves with Mexican interests and commend themselves to that pride of independence and self support characteristic of every people. They do not try to do business on the conditions of their own home trade. They seek to supply the Mexican market rather than force the Mexican to patronize the European. They seek by long residence and thorough familiarity with the people to furnish the goods that will be most readily salable and on terms most convenient to the Mexican retailer. The American merchant of the past seems to have been indifferent to, or impatient of, these requirements, and so has failed where he might have succeeded. The Mexican consumer has his own standard of styles and qualities and is too conservative to yield readily to an importer for whom he has had no great fondness.

It must not be forgotten, however, that in some lines of trade, and particularly on this frontier, the United States has no real competition. This is true of machinery, agricultural implements, arms, ammunition, edged tools, watches, clocks, groceries, and cottons.

I am not aware of suggesting anything new in this connection. It seems new to me, however, and true. The eyes of all our merchants and manufacturers are turned hither as never before. Millions of dollars have been expended in investigating trade with Mexico and sister republics in Central and South America, acres of reports and statistical tables have been prepared, and yet that advance toward the command of these markets which we covet has not been made that ought to have been made. Why? Because our laws are not yet adjusted to facilitate exchange, and our traders have not been willing "to go to the mountain;" they would bring the mountain to them. If the United States would dominate the Americas commercially, she must become thoroughly imbued with that purpose and strip to the work. But the present condition in trade at this point is not wholly due to a lack of perfect reciprocal relations; it is due, in part, to a lack of transportation, in part to new tax laws that have driven some merchants out of business, in part to the unprecedented drought of the past 2 years, and in part to an invincible

Mexican ignorance of what a stream of water flowing through the land is for and an incomprehensible indifference to the riches that lie concealed in the mountains and plains of this wonderfully favored land. Back of all this, of course, is Mexico's paralysis, caused by her partiality for revolution, and from which she is slowly and certainly recovering. To wars and rumors of wars is due, in large measure, her wretched commercial and industrial inertia, her indifference to her resources. When the Mexican awakens to the blessings of a stable government and realizes the fact that railroads are cementing Mexican unity and making revolutions of the sort in which they have been indulging forever impossible, he will begin to inquire if it would not be well to engage in agriculture as an industry and if there might not be some better way of assuring uniform profits from that industry than dependence upon "the early and latter rains," which so often come too early or too late to assure full crops. Revolutions as a *modus vivendi* are a thing of the past. The confidence which comes from this changed condition is the sure basis upon which we calculate future trade.

Trade means exchange, and exchange implies exchangeable products. In the establishment of better trade relations with Mexico, attention ought first to be given to the development of her resources. The construction of railroads and irrigating ditches, the opening of mines and of markets, the knowledge on our part that when among Mexicans we must trade as Mexicans trade are preliminary and necessary steps. More than all this, it should be borne in mind that the impulse and enterprise must be Mexican. Antiquated prohibitory laws, contrary to the spirit and even the letter of the constitution of 1857, render any acquisition of real estate, rural or urban, by a foreigner difficult, if not impossible. It is possible for the citizen to move rapidly and successfully in all these processes of development, but not for the foreigner. In this discussion of present trade conditions I have tried to make clear the fact that all depends upon the creation of large demands for our manufactures, demands which proceed from new wants and the acquisition of means to satisfy these wants, and, what is equally important, winning the confidence and friendship of our sister Republic.

The most striking characteristic of the year and the people is the widespread and profound depression. To say that times are hard is to use a mild expression. A prominent merchant remarked to me that we were suffering from the loss of money sent out of the country in exchange for corn, and that in a corn-producing district. While this statement may appear exaggerated, it is strictly true when we speak of corn as representing the articles of food that are indigenous here. Instead of having some produce to sell, all have to buy, and this state of things has lasted for 2 years. People are starving all about, as there is no work. Business men are "living upon themselves" in the hope that rains and railroads may reimburse them. If the consul was paid for the wear and tear upon his sympathies, he would be one of the best-paid officials in the service. There are more nonprofessional beggars about this office than business men.

This state of things will not long continue. We are entitled to rain, and a country so rich agriculturally will soon be brought into touch with markets. The prospects for crops this year are good and business must revive.

JOHN B. RICHARDSON,

Consul.

UNITED STATES CONSULATE,

Matamoras, February 17, 1891.

THE STATE OF AMAZONAS.

REPORT BY CONSUL KERBEY, OF PARA.

The following data, though incomplete, shows the importance of the Amazonian trade, which is not at all cultivated by American merchants.

The statistical data are extremely interesting which the collector's office at Manaus has recorded for the year 1890, just ended, with reference to the public income, and also the official value of its direct ocean and home river exportation.

RECEIPTS AT MANAOS.

The receipts foot up a total of 2,165,306 milreis,* which is distributed under the following heads:

Exportation:	Milreis.
Duties on home river exports.....	957,488
Duties on direct ocean exports.....	421,008
Interior taxes on private property.....	66,917
Special income:	
In favor of the Amazon Steam Navigation Company, 3 per cent.....	491,223
Duties collected at the collector's office wharf, equivalent to 15 reis per kilogramme, for rubber exported.....	99,130
Extraordinary, regulation fines, etc.....	751
Deposits, emoluments and income of municipal councils.....	128,788
Total	2,165,304

TRANSIT EXPORTS.

The transit trade with the bordering republics records an exportation of rubber to the amount of 1,636,909 kilogrammes, equivalent to an official value of 3,281,108 milreis, which belongs to the different countries as follows:

Republics.	Quantity.	Official value.
	<i>Kilos.</i>	<i>Milreis.</i>
Peru.....	1,168,909	2,131,981
Bolivia.....	432,548	1,119,666
Venezuela.....	7,976	19,461
Total.....	1,636,909	3,281,108

* 1 milreis = 54.6 cents.

FOREIGN EXPORTS.

The amount of produce of the State of Amazonas sent abroad for the year 1890 is as follows:

Produce.	Quantity.	Official value.
		<i>Milreis.</i>
Rubber.....kilogrammes...	6,608,692	15,663,464
Dry fish.....do.....	566,466	187,030
Cacao.....do.....	151,943	60,793
Skins and hides.....do.....	144,890	348,881
Oils.....do.....	25,278	31,199
Piassava.....do.....	431,215	122,374
Sarsaparilla.....do.....	8,828	3,690
Brazil nuts.....hectolitres...	28,290	315,876
Animal oil.....lires...	12,116	4,552
Total.....		16,737,859

INCOME OF INTERIOR COUNCILS.

The income of the councils alone in the interior of that important State reach the figures of 168,808 milreis, belonging to the following municipalities:

	<i>Milreis.</i>
Manicoré.....	17,954
Labrea.....	60,824
Urucará.....	436
Humaitá (River Ma-leira).....	32,865
Tefe (River Solimoens).....	27,829
Coary.....	8,104
Codajás.....	4,012
Silves.....	63
Borba.....	9,539
Barcellos.....	4,321
Itacoatiara.....	834
São Paulo d'Oliveira.....	2,027

This income does not represent the total belonging to the said municipal councils, but is merely that coming from duties collected by the collector's office from the produce shipped at points distant from the seat of the municipality (county seat), and the payment of whose tax could not be made there.

FUTURE OF THE STATE.

The figures which are here transcribed entirely demonstrate the value of the public wealth of the State of Amazonas and the high worth of the great resources at its disposal, for it is well to remember that the receipts of the collector's office, arising almost entirely from the exportation of natural products, are still not the general amount of the income of the State booked in the treasury and coming from other contributions and from the amounts gathered by subcollectors.

The prosperity of the State of Amazonas and the immensity of its great and splendid future are unquestionable. Already the English and German capitalists who are located permanently, through agents at Para, are beginning to transfer their interests in this direction by the establishment of branch houses at Manaus. This is 1,000 miles up the Amazon.

No American steamers ascend this great river, and no effort is being made by the consumers of three-fourths of the product of the valley to sell any of their own manufactured goods in exchange. Probably the American people do not fully comprehend the importance of the immense field that is being quietly developed by our competitors.

JOSEPH O. KERBEY,
Consul.

UNITED STATES CONSULATE,
Para, February 25, 1891.

MANAOS-NEW YORK TRADE.

[Inclosure in Consul Kerbey's report.—Report by Consular Agent Baird.]

The increase of trade between this port and that of New York during the past 3 or 4 years is amazing, especially taking it from January, 1888, when the steamer service run under contract with this State was increased, and which, although it had been in existence ever since the year 1882, only commenced to show vivid signs of reality from 1888 forward, when the annual voyages of the steamers of said line were increased from four to six. Since, by force of the same contract, a like increase from six to nine voyages has taken place, and which even now is insufficient, proved by the fact that the steamer *Cyriel* of the Booth line is expected on an extra voyage from New York via Para on the 26th instant.

I am very sorry that official statistics have hitherto been so sadly neglected at this point, or I would be glad to send by this mail a comparative showing of the increase above referred to. Data for the past 3 months, compared with the same period last year, show the same steady increase above mentioned. Those of August show that the official value of coastwise cargo (*cabotagem*) this year exceeded by 607,593 milreis that of 1889, whilst that shipped to the consuming markets (*longo curso*) figured no less than 546,874 milreis, against 258,480 milreis during the same period in 1889; the grand total amounted to 1,385,834 milreis, against 489,847 milreis in 1889.

The above, I may here mention, refers to provincial and State taxes, which to-day figure at 13 per cent. on official value, in addition to which there is a General Government tax of 9 per cent., exclusive of 2 per cent. municipal or town dues, equal in all to 24 per cent. On rubber from inland the tax of 9 per cent. is charged at the Para custom-house. When the rubber is not landed for sale on this market, a reduction of 3 per cent. is also made by this State government, which means on rubber shipped direct to the consuming markets.

Shipping opportunities are at present mostly to Europe by the Red Cross line of steamers, likewise running under contract with the government of this State, and, like that of the Booth line, call at the same river ports, viz, Itacoatiara and Parartine, both belonging to this State, whence they proceed to Lisbon, Havre, and Liverpool.

JAMES BAIRD,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Manaos, February, 1891.

TRADE AND COMMERCE OF MARACAIBO.

REPORT BY CONSUL PLUMACHER.

EXPORTS TO THE UNITED STATES.

Coffee.—The exports of coffee to the United States in 1890 were nearly 4,000,000 pounds less than in 1889, the amount invoiced being 34,217,604 pounds, valued at \$6,522,338.13 United States gold. One reason for this decrease in the quantity exported is that various of the great houses which have sufficient capital to permit such a proceeding frequently keep very large amounts in store for many months while awaiting a rise in prices abroad; for example, one firm has at present a supply of coffee to the value of nearly \$500,000, which will be exported when prices are such as to give the desired profit. Of course, it is only a very wealthy firm that can afford to lock up capital for months at a time, but the system has always given good results in the end.

Cacao.—The exports of cacao have nearly trebled during the past year, the quantity invoiced to the United States amounting to 158,324 pounds, valued at \$31,788.66. Should cacao be more extensively cultivated, this section will be greatly benefited both on account of the exceptional prices which the Zulia article commands in foreign markets and because the district will become less dependent for its prosperity upon the one sole staple of coffee.

Copaiba.—There has been a falling off in the exports of copaiba and other gums, which is to be much regretted, as the forests of this section are abundantly supplied with these valuable products and their extraction is attended with large profits. The amount shipped in 1890 was 20,991 pounds, of an invoice value of \$12,315.15.

Divi-divi.—For the past two years divi-divi has been shipped to the United States as an experiment. It is extensively used in Europe as a substitute for bark in tanning leather, but it has not met with much favor in the United States, and the quantity shipped thereto during 1890 was much less than in the preceding year, amounting only to 96,108 pounds, valued at \$1,662.84.

Fish sounds.—This industry is on the increase, and is carried on with more system than formerly. The demand for fish sounds in the United States always exceeds the supply, and prices are therefore high enough to give large profits. The increase in the shipments during 1890 was considerable, these amounting to 73,361 pounds, at an invoice value of \$19,362.72.

Hides and skins.—For years there has been but little difference in the quantity of hides and skins exported to the United States; but during the past year there was a considerable decrease, the exports of hides amounting to 639,528 pounds and those of skins to 164,671 pounds, of the respective values of \$60,764.38 and \$36,694.43. As I have previously stated in this connec-

tion, there is no reason why a tannery at Maracaibo, united to a boot and shoe factory and a saddle and harness shop, should not give most excellent results. The raw material is abundant and cheap, and the supply of divi-divi is inexhaustible, and, while this bean is not equal to first-class oak or hemlock bark, it fully answers all the requirements of this country.

Woods.—The amount of the various woods exported during 1890 was only one-half of that shipped in the previous year, but, notwithstanding this decrease, it is gratifying to note that several varieties of valuable woods hitherto unknown in the United States have been shipped thereto for trial and have been very favorably received. When it is known that, out of more than one hundred hard construction woods which abound in this district, only three or four varieties have been brought to the notice of the outside world, the great possibilities of this branch of export are evident. The total value of all exports to the United States during the year was \$6,711,-073.87, as against \$7,097,300.83 in 1889; but this falling off does not by any means indicate a decrease of local prosperity. I hope to be able to report, as the spring advances, increased commercial activity in the relations between this district and the United States, and, indeed, our manufacturers and exporters seem to be taking more interest in securing this important trade.

IMPROVEMENTS IN MARACAIBO.

It has always given me pleasure to report a steady yearly advance in the prosperity and civilization of Maracaibo and the State of Zulia at large, but I must heartily admit that at no time during my residence in this city has the progressive spirit of the people been more manifest than at present.

Street cars.—Lines of street cars intersect each other and extend a considerable distance into the country, as Maracaibo is rapidly extending in all directions.

Maracaibo annex.—North of the city there is a high plateau of level ground several square miles in area, which has been granted by the municipality to a building association, and a new city, which will be, however, a practical extension of Maracaibo, will soon spring up. The scheme is a daring one, but has every prospect of success, as the population is greatly on the increase and houses are in constant demand. A steam line 5 or 6 miles in length will run through Maracaibo proper and the proposed "annex," and the new city, as a residential district, will be far superior to the old, as even in times of epidemics the plateau which will form its site has always been free from disease, and it is even said that a case of yellow fever has never appeared among the inhabitants.

Water supply.—Its elevation above the level of the lake makes a difference of several degrees in the temperature, and the only apparent drawback is the nonexistence of water, which, however, I am satisfied, from personal investigation and examination of the geological conditions, can be easily secured at no excessive depth by means of artesian wells. It seems rather extraordinary that, notwithstanding the importance, progress, and population

of Maracaibo, it is still entirely dependent for its supply of fresh water upon the very primitive method of catching rainwater in cisterns. It is true that several years ago large sums of money were expended in a tubular aqueduct about 2 miles in length, leading from wells dug where there was supposed to exist either a subterranean river or a practically inexhaustible deposit of fresh water caused by the filtration of the rain down to a bed of stiff, impenetrable clay. There was much difference of opinion among engineers as to the probable results of this project, but the doubters were overruled, the wells were dug, and steam pumps set to work to raise the water to a large masonry reservoir, from which the force of gravity alone impelled it to the city, where various fountains were erected for its distribution to the public and pipes laid in the houses of those who so desired. The scheme, however, as might have been predicted from the first, resulted in disappointment and failure. First, there was no subterranean river, and, second, the water found was more of a filtration from the semisaline lake than from the rain, being, moreover, so strongly impregnated with saltpeter that for drinking and culinary purposes it was entirely unfit, and even inferior to the water of the lake. For irrigating purposes and for washing it can be used; but, instead of having, as was fondly imagined by the originators of the project, an ample and never-failing supply, the wells occasionally become nearly dry, so that even the public gardens suffer for want of irrigation. Various other projects have been discussed, and within the past few days the government of the State has entered into a contract with an individual, who for certain considerations guaranties to supply Maracaibo with 500,000 litres of fresh water daily, and more, if necessary, upon additional remuneration. The water is to be brought from the River Palmer, over a broken country, through pipes of 40 centimetres in diameter, which, I much fear, will not be of sufficient size, considering that the distance is about 65 miles and the water of the Palmer at times very turbid, holding in solution much earthy and other organic matter. I sincerely hope the scheme may be successful, but I have my doubts. When all the circumstances are taken into consideration, it seems very evident to me and many others competent to form opinions on the subject that the very vital problem of a satisfactory supply of water can only be solved by means of artesian wells, and I venture to assert that by thus expending one-third of the amount already thrown away in worthless projects Maracaibo would within a twelvemonth be blessed with an abundance of the sparkling element.

THE STATE OF ZULIA.

Restoration to statehood.—Since the restoration to Zulia of her State autonomy, of which she was so despotically deprived in 1881, business of all kinds has become more brisk, and it is believed that the present year will witness the establishment of new industries and works of progress. The railway which is to connect Lake Maracaibo with the great Cordillera is steadily progressing, and trains are running for a distance of about 20 miles into the interior.

Railways.—The often-talked-of project of connecting by rail this city with the fertile district of Perija has as yet resulted in nothing practical, but a fortune is awaiting anyone who will take the matter seriously in hand.

Coal and petroleum.—The enormous deposits of coal and petroleum within easy reach of the lake coast are still lying idle, and thousands of gallons of the latter are running to waste daily.

Timber.—The almost incredible timber wealth of the forests is as yet practically unexplored, and the mines of valuable metals known to exist on the Colombian frontier remain untouched.

Capital wanted.—Almost in any direction and in any branch of industry this district is ready to yield great riches, and I still have hopes, although the experience of past years has made them but faint, that when the day for the development of these many sources of wealth arrives our own countrymen may be found in the van. I frankly confess that, were I a capitalist, I would not look further than Zulia for the investment of my surplus means. Since the reërection of Zulia into a sovereign State it has been governed by a provisional president appointed by the national executive. This was a wise arrangement, as local political passions here were running high, and the months of provisional government by an official who has no special leaning towards any of the parties or personalities of the State have had the effect of calming the excitement incident upon a change of administration and lessening the force of political animosities, which here almost take a personal turn.

Now, however, the provisional government is drawing to a close, and on the 1st of next month the State will fairly enter upon self-government through the medium of authorities of its own election.

BOUNDARY LINES.

The people of this section especially are awaiting with much interest the decision of the Spanish Government respecting the boundary of Venezuela and Colombia in the Goajira peninsula. Should the arbitration result in favor of Venezuela, the proposed railway from this city to Bahia Honda, a fine port on the west coast of the Goajira peninsula, may soon be commenced.

E. H. PLUMACHER,

Consul.

UNITED STATES CONSULATE,

Maracaibo, January 13, 1891.

SHIPPING AT GORÉE-DAKAR.

REPORT BY CONSUL STRICKLAND.

There were entered at this port, of all nationalities, during the quarter ended December 31, 1890, 557 vessels of 163,425 tons manned by 7,079 men, and there were cleared during the same period 595 vessels of 165,497 tons manned by 7,349 men. The apparent small size of the vessels, judg-

ing from these figures, is due to the fact that some small cutters are included which trade with the British settlements on the Gambia and the Portuguese on the Rio Grande. These count in numbers, but not much in tonnage. The steamers trading here range between 1,000 and 6,000 tons each. The duties (5 per cent. ad valorem) collected, including octroi, amounted to 905,603.55 francs.

Statistics from officials here are difficult to obtain on account of instructions they have received to be reticent. There was quite an excitement in the colony a few years since, owing to a rumor that a certain Pole in the employ of the colonial government at Dakar was in correspondence with German officials. This led to the adoption of the policy which has since been persevered in.

PETER STRICKLAND,
Consul.

UNITED STATES CONSULATE,
Gorté-Dakar, February 17, 1891.

PORTLAND CEMENT.

REPORT BY CONSUL-GENERAL NEW, OF LONDON.
MANUFACTURE.

The manufacture on an extensive scale of Portland cement, which is the trade name given to nearly, if not quite, all the cement made in England, is a comparatively new industry, having been developed almost entirely within the last 25 years.

It is made cheaper and of a superior quality in England for the reason that its constituent elements, *i. e.*, chalk and clay, both of a peculiar chemical formation, are found here in great abundance in the same localities and easy of access. The manufactories are principally located in the counties of Essex, Surrey, and Kent, on the Thames, Medway, and tributary rivers, which afford cheap transportation for the raw and manufactured product.

These manufactories, about forty in number, represent a very large outlay of money and labor and employ thousands of men all the year. In addition to these, there are a few smaller cement manufactories in northern England, which do not enter seriously into competition, however.

The process of manufacturing is not complicated and requires no great amount of machinery aside from the mills used in crushing. Both the clay and chalk, which are found in the so-called cement district, are very plentiful, close to the surface, and easily quarried. Their mixture in the proper proportions is made by experts very carefully, and, after the amalgamated product is properly calcined, it is crushed, tested, and packed ready for shipment. The chief difficulty in the manufacture is found in unexpected chemical combinations, which frequently occur, and which so alter the character of the product as to make it unproductive of the best results.

For this reason each day's product is very carefully tested as it comes from the mill, and if it falls below the standard it is rejected.

A cement that answers all the requirements possesses the following qualifications:

(1) Fineness to be such that the cement will all pass through a sieve having 625 holes to the square inch, and leave only 15 per cent. of residue when passed through a sieve having 2,500 holes to the square inch.

(2) Weight per striked bushel to be not more than 116 pounds nor less than 112 pounds.

(3) Specific gravity to be between 3 and 3.05.

(4) A pat made with the minimum quantity of water to be set in not less than 3 hours, nor to take more than 6 hours.

(5) Tensile strength. Briquettes which have been placed in water 16 or 17 hours after gauging to carry, at the expiration of 7 days, 400 pounds per square inch without fracture, and at the expiration of 28 days from gauging to have increased in strength at least 25 per cent.

(6) Expansion or contraction. Pats left in air or placed in water to show no cracks or other signs of deviation in form.

(7) Color. The cement to be of a cold gray color, and when gauged to show no change if left in either air or water.

A cement that possesses the foregoing properties may be considered a fair sample of a true Portland cement and would be suited to any work where great ultimate strength is required, and at the same time it is such a specification that no manufacturer would object to work up to.

It is the contention of the manufacturers here that their cement is of a better quality than that made in any other country, for the reason that the materials are better and freer from impurities. Portland cement has for its base before calcination carbonate of lime, which is generally found here naturally combined with silica and alumina, or the mixture is artificially arrived at, and the proportion which these ingredients bear to each other, the intimacy of their mechanical mixture, and the degree of heat to which they are subjected determine the quality and properties of the result, so far as the chemistry of the product is concerned.

The fineness to which the grinding is carried, the warehousing, and the care bestowed in the manufacture likewise have a determining result on the product.

The various processes, particularly the proportions of the materials used, are generally kept secret, and it is very difficult to ascertain the details. In Germany and Austria and some other countries on the Continent the matter of testing cement and regulating its manufacture are taken in hand by the Government.

In England, however, only general vague laws and regulations laid down by practice have been adopted, and, as a consequence, the results obtained by different experimenters are not so uniform as could be desired, each having used the means and adopted the standards of quality which appeared to them to be best.

EXPORTS.

From the official reports on the subject, the exportation of cement from England to foreign countries during the year 1888 was as follows:

To—	Quantity.	Value.
	<i>Tons.</i>	
Russia.....	7,449	866,800
Sweden and Norway.....	5,192	47,665
Germany.....	8,277	72,195
Holland.....	17,325	173,985
France.....	132,220	127,960
Portugal.....	6,250	60,990
Spain.....	9,576	87,005
Roumania.....	5,878	52,075
Egypt.....	10,685	93,260
China.....	4,220	34,195
Japan.....	14,826	126,955
United States.....	187,058	1,790,525
Venezuela.....	10,686	103,240
Chile.....	7,025	67,830
Brazil.....	14,324	142,320
Uruguay.....	9,947	96,900
Argentine Republic.....	57,558	552,425
Other foreign countries.....	15,170	157,980
British colonies.....	203,128	1,984,295
Total.....	612,702	5,825,000

No figures are obtainable as to the sale and consumption of cement in England.

COST OF MANUFACTURE.

In response to inquiries made of various manufacturers as to the first cost of making cement, evasive answers were in every case given, the gentlemen stating that for business purely they must decline to give the information desired. All strenuously insisted, however, that the business, as at present carried on and at the present prices of the product, did not give an adequate return upon the investment made. It was stated that the average profit in the business during the past few years was not in excess of 4 per cent. upon the investment and operating expenses. The present price at which cement is invoiced in this consulate-general is from 24s. to 26s. per ton, with a discount of $2\frac{1}{2}$ per cent. allowed. The product is shipped in casks which are invoiced at about 2s. each, and which hold from 370 to 380 pounds each. Employment in the cement manufactories is generally by "gangs," i. e., the men are paid in accordance with the amount of the product, and not per diem. The average wages, probably, will not exceed 24s. (\$5.82) a week, and in many cases will fall below this.

The cement-workers in the larger concerns are generally men who have been so engaged since they were able to perform any manual labor, following the occupation of their fathers and in time transmitting it to their children. The principal competitors of the English establishments are those of Germany, which have developed rapidly in the last few years.

I have the honor to transmit herewith a pamphlet by Mr. D. L. Collins, of Messrs. Gibbs & Co. (limited), cement manufacturers on an extensive scale, on some chemical aspects of the product and tests to which it is subjected.

JNO. C. NEW,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
London, June 12, 1890.

PORTLAND CEMENT.

[Inclosure in Consul-General New's report.]

Although Portland cement has during recent years received much attention from engineers, the writer is not aware that any manufacturer has published the result of that experience which can only be obtained by the constant and practical attention necessary to the production of thoroughly good quality; and he therefore trusts that the following remarks as to the usual tests and the manner of their application may not only be of general interest, but limit, to some extent, the anxiety of both manufacturers and engineers.

One special reason that leads him to do this is the conviction that, whilst it is now being generally acknowledged that a cement giving a high tensile strength at short dates is not likely to prove one of a sound and progressive nature, engineers are not, perhaps, aware that by adding a "time in breaking" to the condition of tests they have really raised the standard of 750 pounds on the $1\frac{1}{2}$ -by- $1\frac{1}{2}$ -inch section equal to over 1,100 pounds. It is quite possible for an expert constantly gauging with fixed conditions as to temperature and atmosphere to get this result with a safe cement, but, if the cement is to be tested by anyone with less experience, it is necessary for the manufacturer to work to a still higher standard, *i. e.*, to increase the proportion of lime to the highest possible point.

Some authorities think the danger of doing this can be counteracted by heavy burning. This is certainly not invariably the case. For instance, he has seen briquettes made from a cement weighing 123 pounds to the bushel, testing at 7 days 1,200 to 1,300 pounds on the $1\frac{1}{2}$ -by- $1\frac{1}{2}$ -inch section (and which at 2 years could not be broken with a strain of 1,430 pounds), break a few months later at under 800 pounds. This was doubtless entirely due to the excess of lime which it was necessary to use in the original mixture, and he believes it is this high proportion which has been the real cause of recent concrete work failures—failures that were almost unknown before high tests came into vogue.

He would therefore suggest that a breaking strain, to be made under ordinary conditions of 700 pounds on $1\frac{1}{2}$ -by- $1\frac{1}{2}$ -inch section, or, if with a time-test of 1 minute, of 600 pounds, will give safer and ultimately better work than any higher requirement.

Tensile strain is one of the conditions of a specification most stringently enforced. At the same time it should be remembered that it is a test which depends greatly on the state of the atmosphere, and still more so on the skill of the manipulator.

With regard to the latter point, it is by no means an infrequent occurrence to find two men making briquettes from the identical cement producing results varying from 25 to 33 per cent.

It is therefore specially important that tests should be made by skilled labor and under fixed conditions of temperature, proportion of water, etc.; and the writer has added at the end some rules, which, if adhered to, will be found to assist in obtaining accurate results.

Weight per bushel is only of much importance when taken in conjunction with fineness of grinding; but to get accurate comparative results the cement should be fed through a standard hopper into a bushel measure, also of standard size, placed 18 inches below its mouth.

Fine grinding, however, makes considerable alteration in the weight test, as the following figures will show: An imperial bushel of best cement, freshly ground, passing through an

80-mesh sieve and leaving 10 per cent. residue, weighs 110 pounds; leaving 20 per cent. residue, 116 pounds; leaving 25 per cent. residue, 121 pounds; leaving 35 per cent. residue, 123 pounds.

When weight per bushel is specified, it can only be ascertained by weighing a whole bushel; to weigh a given part and then multiply will not give a correct result.

All cement increases in bulk with age; therefore, the weight per bushel becomes proportionately lighter.

For this reason there will often be a discrepancy, after a long voyage, of several pounds between the weight per bushel on arrival and that ascertained at the time of shipment.

Fineness of grinding has been proved by Mr. John Grant and other authorities to be a most important factor in the strength of concrete, and should therefore have special attention.

The extra cost of production to some extent counteracts the higher quality obtained, but the following degrees of fineness should at least be required: For ordinary purposes, to leave under 15 per cent. residue, through 2,500-mesh sieve; for general engineering, to leave under 10 per cent. residue, through 2,500-mesh sieve; for special work, to leave under 10 per cent. residue, through 5,800-mesh sieve.

Water test is one of the safest guards as to the soundness of cement.

Thin cakes, or pats, should be made up and placed upon pieces of glass or other nonabsorbent material, and then, when thoroughly set, one cake should be immersed in water, the other being kept in the air. Care should be taken that the cement is thoroughly set before immersion, and for a slow-setting quality the pats may sometimes require 24 hours to become so. If after this the pats show cracks on the outer edge, the cement should not be passed, unless it can be proved that the defect is due only to freshness of grinding, and can therefore be thoroughly remedied by air slacking.

A further useful test is to fill a test tube with gauged cement. Good cement always expands slightly, so that in the course of 2 or 3 days the tube will crack; if, however, the expansion is so great as to blow the glass to pieces, the cement should be regarded with great suspicion.

Chemical analysis* has no exact relation to the strength of cement, but is chiefly useful in detecting any excess of sulphur or magnesia, which are both regarded as dangerous elements, if present in any large percentage.

The following gives the average composition of a sound cement:

Composition.	Percentage.	Composition.	Percentage.
Lime.....	59.2	Alkalies.....	0.5
Silica.....	21.7	Magnesia.....	0.64
Alumina.....	9.82	Moisture.....	2.79
Oxide of iron.....	3.76	Total.....	100
Sulphuric acid.....	1.57		

Specific gravity is useful in detecting the admixture of slacked lime or iron slag meal, as when so treated the cement will not give the 0.03 specific weight, which is the standard of a freshly ground genuine Portland.

Slag cement has been for some time manufactured in Germany, and works have also been recently started in this country for its production.

Being a mechanical mixture of iron slag with slacked lime, it is very different in its constitution from Portland cement, which is a true chemical combination.

It is stated by its inventors to be fully equal in quality to Portland cement; this is, however, not admitted by the highest authorities. It is distinguished by its light specific gravity and by its color, which is of a mauve tint in powder, whilst the inside of the water pat when broken is deep indigo.

* See also appendix.

Its presence, when mixed with Portland, may be detected as follows, viz: To a gill of water is added about $1\frac{1}{2}$ drams (80 drops) of sulphuric acid. Into this 25 grains of the cement is dropped and quickly stirred, so as to prevent any setting, and then immediately, and whilst still stirring, Condyl's fluid is allowed to fall in drop by drop until the red color remains permanent.

A good genuine cement will require only 10 to 15 drops of the fluid (certainly not more than 20), whilst an adulterated cement will take considerably more (say 30 to 60) and a cement made from slag only probably over 200 drops.

Mr. H. B. Yardley, analytical chemist, has also formulated the following as a simple test for the same purpose, viz, to place upon a clean silver coin a thin layer of the suspected cement, dropping thereon a small quantity of dilute sulphuric acid (1 acid to 7 water), and afterwards rinsing with water. If the cement is genuine, the thus treating with acid will only slightly affect the color of the silver; but, if slag is present in any notable proportion, a dark brown stain will be produced upon the coin.

In conclusion, he would remind engineers of the great difficulty there is (especially during hot weather) of properly cooling the cement at the factory, and that it is therefore most desirable that, whenever the nature of the work will allow, air slacking for 3 or 4 weeks should be made a condition of the specification.

The writer offers the foregoing as a result of many years' careful experience, an experience which leads to the conclusion that there is still very much to be learned as to the laws which govern Portland cement, more especially as they affect "time of setting" and "breaking strain."

Specification suggested for Portland cement.

Description.	Weight per bushel.	Tensile strain per square inch.		Finess of grinding.
		7 days.	28 days.	
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	
Engineering work.....	112	350	450	Under 10 per cent. residue, through 2,500-mesh sieve.
Special work.....	110	350	450	Under 10 per cent. residue, through 5,800-mesh sieve.
For sand test, 1 part of cement and 3 of standard (Leighton buzzard) sand, special work.	110	200	170	Under 10 per cent. residue, through 5,800-mesh sieve.

Comparative tests at 7 days' age of the same cement ex Wandsworth, July, 1886.

	Pounds.
A. Southam, esq.....	290
Hy. Faija, esq. (broken at the rate of 100 pounds per 15 seconds).....	389
Gordon & Co.....	466
Eastwood:	
Kent Road*.....	372
Grays*.....	510
Gibbs, Grays.....	525

As an example of loss of weight with age, an imperial bushel of cement which weighed, when 1 day old, 117 pounds weighed 1 month later 113 pounds; 2 months later, 108 pounds; and 12 months later, 103 pounds.

DIRECTIONS FOR TESTING THE TENSILE STRENGTH.

(1) In sampling a freight, several sacks or casks should be shot in a heap and well turned over together, the briquettes being made from this mixture. If samples are only taken from

• Made up by the same gauger. •

the mouths of the sacks or tops of the casks, there is danger of the cement having become dead, and therefore not fairly representing the bulk.

(2) Spread out the sample for a few hours before gauging, so that it may become thoroughly cool and air slacked. This is especially important in hot weather.

(3) Always weigh the cement, sand, and water before gauging, as a very slight excess of the necessary amount of sand or water will materially affect the result. Mr. Parkes says:

"There would sometimes be a difference of 100 or 150 per cent., without any apparent cause, in the breaking strain of two bricks made from the same sample; consistent results could only be obtained by adopting exact proportions of cement and water. In one experiment he used four-tenths of a pint of water for each test block, when the breaking weight in four cases was 970 pounds, 980 pounds, 1,000 pounds, and 980 pounds. After that he made up two more samples mixed with a half pint of water, instead of four-tenths of a pint, and these broke with 590 pounds and 370 pounds; two others, made up with nine-twentieths of a pint, broke with 750 pounds and 375 pounds."

Unfortunately, every sample will require a varying amount, according to the nature of its setting (quick or slow), fineness of grinding, and the state of the atmosphere; but, as a rule, from 18 to 28 per cent. will be sufficient where 1-inch molds are used.

(4) Carefully clean the molds with a slightly greasy cloth and place them on iron plates.

(5) Do not attempt to gauge too much cement at a time. If using 1-inch molds, weigh $6\frac{1}{2}$ ounces of cement and $1\frac{1}{4}$ ounces of water to fill one mold, or 20 ounces of cement and 4 ounces of water, enough to fill three molds; if for $1\frac{1}{2}$ -inch molds, weigh 40 ounces of cement and $8\frac{1}{2}$ ounces of water. Add the water little by little, working with a trowel until the mixture becomes a short, harsh paste; discontinue adding water, but continue working with the trowel for a few minutes, when the paste will become fat and smooth. If only the proper quantity of water has been added, the sample will be stiff enough to stand with a straight edge, but if too much it will almost flow. In filling the molds, considerable care is required to get rid of the air in the cement and make the briquette solid. The whole operation of gauging and filling the molds should not occupy more than 4 to 5 minutes, and the quicker it is done, provided it is done properly, the better will be the result, for it is most important that the cement should be at rest before the setting action commences. The best form of molds are those which screw together, and when these are used the briquettes should not be taken out until 24 hours after gauging. This "taking out" requires great care to avoid flaws, especially when "press" or spring molds are used.

Atmospheric influence.—Heat and cold have both an important effect on the tensile strength of cement; therefore, care should be taken that during summer the atmosphere of the testing room is not so dry as to cause undue evaporation of the proper proportion of the water added in mixing the test bricks, and that in winter the temperature does not fall so low as to cause this proportion of water to freeze before a thorough combination takes place.

Temperature of water.—It is also necessary for obtaining correct results that the temperature of the water used for gauging should be as nearly as possible the same during all seasons of the year, viz, about 60° F.

CONCRETE-MIXING.

Good concrete can be made from clean gravel, river ballast, stone chippings, burnt clay, shingle, broken bricks, crushed flints, etc.; and the proportion generally adopted by engineers is 1 of cement to 8 of these or similar materials, technically termed the aggregate.

To insure satisfactory results, the following precautions should be taken:

(1) To have the cement shot into a dry shed a few days before using, so that it may be thoroughly cool and air slacked.

(2) To use clean water only.

(3) The cement and aggregate should be raked or turned over together twice dry, and this operation again repeated whilst the water necessary for hydration is being added. This should always be poured through a rose (an ordinary watering pot is as good a means as any),

as throwing on from buckets washes the cement away from the aggregate. Repeat the mixing once more and the concrete is ready, *i. e.*, it has been turned over four times—twice dry, once whilst being watered, and once afterwards.

(4) When the aggregate consists of crushed bricks or other porous material, it should be thoroughly wetted and time allowed for absorption previous to use, otherwise it will take away part of the water necessary to affect the setting of the cement.

(5) It is often desirable to add a proportion of sand to the aggregate to assist to fill up the corners. When this is done, care should be taken that the sand is sharp and clean—the coarser the better.

(6) Concrete should be used at once after mixing, as to remix or disturb when partially set destroys its setting property.

(7) When used for plastering over brickwork, this should be first well wetted.

(8) Slow-setting cement gives, eventually, the strongest concrete.

The proportion of 8 and 1 is named as that usually specified, but with good, tested cement a larger proportion of aggregate may be added.

These hints will be found useful in preventing the misuse of cement, but the writer would recommend all who are interested to know what cement can do for engineering works to read "Grant on the Strength of Cement;" or, for more general purposes, "Portland Cement for Users," H. Fajja, G. E.; and "Concrete: Its Use in Building," by Thomas Potter.

[Appendix.]

SIX YEARS' EXPERIENCE OF CHEMICAL ANALYSIS IN RELATION TO QUALITY IN THE MANUFACTURE OF PORTLAND CEMENT.

Chemical analysis demonstrates whether a cement contains only its due percentage of lime, and also, by the percentage remaining of carbonic acid, whether this lime has been properly combined during the process of burning with the silica and alumina.

This is most important to engineers and contractors, as the true cause of failure in concrete work may in nearly all cases be traced either to the use of an excessive proportion of lime in the original mixture or to some of the lime being present after burning in the free, *i. e.*, not chemically combined, state. This is indicated at once by the percentage of carbonic acid, which should in no case exceed 1.5 per cent.

Table showing the yearly averages of the composition of cement.

Composition.	1882.	1883.	1884.	1885.	1886.	1887.
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
Carbonic anhydride.....	0.39	0.71	0.6	1.14	1.04	1
Sulphuric anhydride.....	1.67	1.07	1.4	1.81	1.85	1.65
Insoluble silica.....	1.77	3.53	1.06	1.88	1.57	1.17
Soluble silica.....	20.9	19.31	22.52	23.24	22.7	23.63
Alumina and ferric oxide.....	12.68	13.37	9.6	10.82	11.34	10.87
Lime.....	61.31	59.09	61.16	59.68	59.17	59.47
Alkalies, water, etc.*.....	1.26	2.92	3.63	1.33	1.97	2.21
Total.....	99.98	99.8	99.97	99.9	99.64	100

*A separate determination of magnesia was not made until the year 1886-'87, when the highest percentage present was found to be 0.79 per cent. and the lowest 0.46 per cent., giving a mean of 0.62 per cent.

In publishing the above yearly averages of the composition of cement the manufacturers need only add that it is with cement of this quality that the following important works have been supplied, without one single case of failure :

	Tons.
East London harbor (under Sir J. Coode).....	5,000
Metropolitan board of works (under John Grant, esq.).....	6,000
Liverpool docks (under G. F. Lyster, esq.).....	50,000
Newhaven harbor (under F. Banister, esq.).....	10,000
Quebec and Esquimaux dock (under Messrs. Kinipple & Morris).....	5,000
The Tay bridge (under Messrs. Barlow & Son).....	10,000
Barrow docks (under F. C. Stileman, esq.).....	7,000
Dublin port and harbor board (under B. B. Stoney, esq.).....	5,000
Dublin corporation works (under Parke Neville, esq.).....	1,000
Cork harbor board (under P. Barry, esq.).....	2,500
Alexandra docks, Hull (under James Abernethy, esq.).....	4,000
Victoria dock, London (under Sir A. M. Rendel).....	4,000
East & West India dock, Tilbury (under Messrs. Manning & Baynes).....	5,000

Table showing the average tensile strength of Gibbs & Co.'s Portland cement on 1½-by-1½-inch section, representing the breaking of 5,000 briquettes.

Date.	1882.		1883.		1884.	
	7 days.	28 days.	7 days.	28 days.	7 days.	28 days.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
January 1.....	1,000	1,325	930	1,110	1,012	1,230
January 15.....	995	1,275	900	1,130	980	1,140
February 1.....	990	1,235	1,000	1,290	1,030	1,230
February 15.....	915	1,155	1,045	1,345	885	1,100
March 1.....	980	1,235	1,060	1,320	1,005	1,270
March 15.....	1,055	1,350	985	1,320	1,020	1,280
April 1.....	1,050	1,185	970	1,070	900	1,225
April 15.....	1,000	1,230	1,130	1,260	957	1,195
May 1.....	965	1,275	1,025	1,205	937	1,200
May 15.....	1,002	1,280	950	1,255	950	1,230
June 1.....	1,010	1,255	1,020	1,170	1,050	1,130
June 15.....	947	1,200	995	1,245	960	1,210
July 1.....	975	1,080	900	1,140	950	1,150
July 15.....	960	1,270	945	1,140	967	1,170
August 1.....	937	1,235	1,040	1,190	880	1,030
August 15.....	1,065	1,310	1,100	1,260	950	1,070
September 1.....	970	1,385	955	1,090	965	1,290
September 15.....	1,005	1,410	985	1,180	965	1,115
October 1.....	1,140	1,295	935	1,110	975	1,145
October 15.....	1,140	1,265	925	1,080	1,040	1,320
November 1.....	1,080	1,260	1,100	1,330	1,185	1,400
November 15.....	970	1,105	1,000	1,130	1,080	1,220
December 1.....	1,050	1,350	970	1,290	1,030	1,325
December 15.....	965	1,100	1,185	1,340	1,035	1,205
Average.....	1,006	1,252	1,043	1,206	988	1,202

Table showing the average tensile strength of Gibbs & Co.'s Portland cement, etc.—Continued.

Date.	1885.		1886.		1887.	
	7 days.	28 days.	7 days.	28 days.	7 days.	28 days.
	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>
January 1.....	940	1,275	950	1,270	955	1,110
January 15.....	945	1,180	965	1,215	1,015	1,200
February 1.....	1,085	1,325	1,035	1,310	1,035	1,310
February 15.....	1,000	1,130	1,060	1,260	1,040	1,235
March 1.....	1,017	1,300	935	1,290	910	1,120
March 15.....	1,045	1,160	930	1,165	1,020	1,140
April 1.....	957	1,250	1,060	1,195	1,135	1,300
April 15.....	940	1,220	1,035	1,225	980	1,210
May 1.....	1,160	1,380	975	1,215	985	1,205
May 15.....	1,072	1,320	975	1,270	1,035	1,335
June 1.....	1,170	1,400	1,050	1,210	990	1,295
June 15.....	1,175	1,320	985	1,190	985	1,200
July 1.....	945	1,210	1,000	1,145	970	1,200
July 15.....	1,092	1,310	997	1,335	850	1,120
August 1.....	1,027	1,380	1,060	1,430	970	1,215
August 15.....	935	1,350	965	1,215	1,120	1,305
September 1.....	1,050	1,270	970	1,190	895	1,190
September 15.....	935	1,225	1,012	1,200	875	1,235
October 1.....	950	1,220	1,025	1,300	1,050	1,290
October 15.....	1,065	1,200	1,020	1,310	1,037	1,350
November 1.....	980	1,210	1,120	1,360	1,050	1,280
November 15.....	925	1,205	965	1,275	1,100	1,440
December 1.....	1,110	1,335	1,115	1,370	1,045	1,310
December 15.....	1,060	1,320	1,025	1,300	1,070	1,340
Average.....	1,021	1,266	1,009	1,260	1,005	1,247

These results were obtained by a skilled workman, whose sole occupation is to gauge cement, and were broken without any time condition.

With a time specification of 15 seconds per 100 pounds or under ordinary circumstances of outside testing, the results would have probably been about 25 per cent. lower, viz, 7 days' average, 750 pounds; 28 days' average, 950 pounds.

The foregoing facts lead to the practical conclusion that the following are the only necessary characteristics for thoroughly sound cement:

Moderate tensile strain of 350 pounds per square inch at 7 days, 450 pounds at 28 days, when broken without "time-in-breaking" conditions.

Fineness in grinding. The finer the better, for in no engineering work should the residuum, after sifting through a sieve of 2,500 meshes to the square inch, exceed 10 per cent.

Freedom from excess of lime in chemical composition. This should not exceed 62 per cent. nor be less than 56 per cent.

Minimum percentage of magnesia not over 1 per cent., sulphuric acid not over 2 per cent., and carbonic acid not over 1.5 per cent.

Good specific gravity of 0.03 specific weight.

Pats, when gauged up and put into water, after having become thoroughly set and hard, should not show any signs of cracks or undue expansion.

WILLOW-WARE MANUFACTURE IN GERMANY.

REPORT BY VICE-CONSUL FLORSCHULTZ, OF SONNEBERG.

Thuringia and Bavaria are the countries in which the above-named manufacture has its principal seat. In Thuringia, Coburg is the center; in Bavaria, Lichtenfels. Both places belong to the consular district of Sonneberg, from which the products of this manufacture are exported, finding a good ready sale all over Germany, Austria, Switzerland, France, Italy, Spain, Portugal, Belgium, Holland, Denmark, England, and the United States.

The principal raw material for the product of this manufacture is the willow, found in all moderate climes, and whose culture nature provides for without needing any particular care.

Besides the willow, an important raw material is the Indian or so-called Spanish reed, imported from India by way of Hamburg and Netherlands ports, mostly coming as ballast. This reed is washed and bleached after being assorted, peeled, split, the kernel called, here "bottichrohr" being thrown out, which latter is worked in the raw and tinged state, the former being the most valuable material for basket-makers next to the willow.

Palm leaf and esparto are also used; the former, imported from Cuba, is mostly used to manufacture baskets and trunks for traveling purposes.

Another esparto, a flaxlike straw, comes from Spain. Of less importance are some other materials, a kind of esparto made of thin wood fibers in Bohemia, China mats, straw braids from Italy and the Black Forest, hemp texture, leather trimmings, and other ornaments.

The most important raw material for the basket-maker remains, however, the willow, whose pliant twigs suit as well for the coarsest articles, as also, after being split in threads, bleached or colored, to produce the most select and delicate articles of braiding work.

The willow, or osier, which still grows on the banks of the Main and its affluents, the Rodach, Steinach, Kronach, in a sandy gravel and moist ground, did not furnish sufficient material to the manufacturers; therefore, from France, Belgium, and other countries was imported what was requisite and what might have been found here if the culture of the willow had been sufficiently fostered.

Since 1870 a change has taken place: people have learned to drain the ground and choose the proper locality for the culture of the willow. Notwithstanding the advantages resulting from such improved culture, very little progress has been made; consequently, the importation of foreign willows is very considerable. During the years 1881-'85 it amounted to 13,770, 14,005, 12,925, 13,395, and 12,291 metric quintals, respectively, of which 2,170, 2,400, 1,809, 1,027, and 769 metric quintals, respectively, came from France and 1,120, 1,100, 966, 1,368, and 1,122 metric quintals, respectively, from Austria, while the principal imports came from other parts of Germany, espe-

cially from Prussia. As before mentioned, the principal places of exportation are Lichtenfels and Coburg. It is almost too difficult to enumerate the articles produced. Baskets of all kinds and sizes are made for all possible purposes—for washing, packing, carrying, and traveling purposes, for ladies' work, baskets to be filled with flowers and sweetmeats. Worktables, newspaper and music stands, baby and doll carriages, stools, chairs, tables, and a number of fancy articles are produced, and all of these articles find a ready sale in the before-named countries, furnishing a source of profit to the houses in Lichtenfels and Coburg who export them and the means of living to the inhabitants all around, clustering in cities and villages in the before-named district. There are no manufacturing establishments, except one or two where the work of braiding is done; the manufacture is a house industry. Everybody lends a hand—the father, the mother, the children—all are busy doing this work, thus finding a source of employment for every leisure hour presenting itself. All of these people have a piece of land, which they cultivate, and occupy themselves, if not busy on their land, with making basketwork. Once or twice a week they carry the objects completed to the exporting houses in Lichtenfels and Coburg, receiving ready cash for them, carrying home, in most instances, the raw material which they need to renew their work.

The approximate amount of basket ware exported from the two before-mentioned principal districts is estimated at about \$1,000,000 a year.

The export to the United States from the consular district of Sonneberg, including Lichtenfels and Coburg, shows the following figures:

Quarter ended March 31, 1890.....	\$25,143.70
Quarter ended June 30, 1890.....	65,867.56
Quarter ended September 30, 1890.....	88,476.33
Quarter ended December 31, 1890.....	64,572.06
Total.....	244,059.65

ALVIN FLORSCHULTZ,

Vice and Deputy Consul.

UNITED STATES CONSULATE,

Sonneberg, February 16, 1891.

DECLINE OF THE IRISH FLAX INDUSTRY.

REPORT BY COMMERCIAL AGENT SMYTH, OF HUDDERSFIELD.

A steady decline in the flax industry of Ireland is noted, notwithstanding the repeated efforts of late years to revive it. Strange as it may seem, however, Belfast still maintains its prominence in the linen trade, while for years the native sources from which it was accustomed to draw its supplies of fiber have been contracting and growing less, so that to-day we find its manufacturers importing from the Continent millions of pounds' worth annually. It is not within the province of this report to discuss the economic causes which have produced such a serious revolution in the commerce of the country, for

such a discussion would only lead to the consideration of systems and questions which may not properly come under consular review. While Belfast to-day exports its linen products to all countries of the globe, the material benefits of its trade have a local application only, instead of being felt throughout every section of the country where a pound of flax can be raised. This is the result of those singular conditions which have been forced upon the people by direct legislation, and which have gradually destroyed all the native industries and driven their natural products off the face of the land. It has been ascertained by Professor Sullivan, of Cork, that the soil and climate of Ireland can not be excelled for the production of flax, and yet Belgium, Russia, and Holland supply millions' worth of the fiber every year to the linen manufacturers of Belfast. It is said on good authority that, were the internal affairs of the country properly managed and this important industry properly encouraged and supported, the Irish flax-producers would soon be able to drive their foreign competitors out of the market and turn to their account every year from \$50,000,000 to \$75,000,000. It would also enable them to export a large quantity of flax of a superior grade.

In an interesting article on this subject Professor Sullivan writes:

I have examined all the soils of Europe and of nineteen American States; none of all these possesses the properties for the production of fiber equal to the soil of Ireland.

A writer in one of the magazines for March takes up the subject and locates the cause of failure among the farmers themselves, charging their methods with the greatest part of it. It must be remembered that these very causes are in themselves but the effects of other causes which invoke conditions and circumstances which are, unfortunately, a part of the political management of the country. The poor farmer is always found between forces, which, operating like millstones, have ground the very life out of him, until there is very little of either him or his name left in the country. He gets none of that encouragement of material aid that might enable him to elevate either himself or his methods in the struggle against superior powers and superior advantages. Hence, he is left to toil and spin in vain, while the Dutch and the Belgians and the far-off Russians step in with their products and carry off the money that should flow into his pockets to improve his lot, enrich his country, or brighten his own home.

It is contended in this magazine article that the failure of the Irish flax in the native market can be explained only by the defective way in which the crop is cultivated. The writer says:

In Ireland the farmers produce the crop and prepare it for the cloth manufacturer. In Belgium, in Holland, and in Russia, on the other hand, the farmer concerns himself solely with the cultivation of the crop. The preparation of the fiber is in the hands of persons specially skilled and trained in the work. The continuance, in Ireland, of the old system is known to entail much loss and waste, while it is seemingly on account of the greater efficiency and higher quality arising from the division of labor that the Belfast manufacturers so frequently prefer the foreign to the home-grown article. After the farmer has sown the seed

and gathered the crop, several processes remain before the flax can be used in the cloth mills. The most important are technically known as "steeping" and "scutching." By steeping is generally meant sinking the straw in deep water. Different methods of steeping prevail in different countries, according to local circumstances. In Holland stones are scarce, so the flax has to be laid on the surface of the water and then covered with mud raked up from the bottom of the water. The finest flax in the world comes from Courtrai, in Belgium, where the fiber is steeped in the River Lys, whose velocity is only at the rate of 3 miles an hour. The straw is sunk packed in crates, and for many miles both banks of the river are used as steeping grounds. In Russia, on the other hand, the flax is merely spread upon the ground, and the rain is left to do the steeping. On Irish flax farms the straw is thrown into pits or wells with the seed still on it, the farmers not having learned the continental trick of saving the seed and yet getting good fiber. Much expense is consequently incurred in obtaining seed from abroad. (On the Continent, too, the method of "scutching" is widely different, the yield of fiber being usually wider and better. So general is the necessary technical knowledge that in the scutching mills the labor is mostly that of girls and lads from 17 to 20 years old, instead of men, as in Ireland, earning 30s. a week. Both the cheapness and the efficiency of the labor is said to be due to the separation of the functions of the producer from what are really those of the manufacturer.

There are two methods by which this is accomplished: the farmer may buy the seed and sow it on his land in order to sell it to the factor, who will prepare the flax for the market; the factor, on the other hand, may himself provide the seeds and hire the land from the farmer, whose remuneration for preparing the land, sowing the seed, etc., will be included in the rent. It is to the adoption of one or the other of these plans that some people in Ireland are looking for a revival of what should be one of its most important industries. At the present time the crop is only cultivated to any extent in seven out of the thirty-two counties, the production of flax in all the southern counties being quite insignificant. The average crop of the seven counties is worth £800,000 per annum; so that, if the other twenty-five counties were producers in the same proportion, Ireland's flax industry—regardless of the seed that should be saved under an improved system, which would in itself represent a considerable sum—could be made to realize an income of between £3,000,000 and £4,000,000 yearly. As a matter of fact, the experts are of opinion that with its well-watered valleys the south of Ireland is even better adapted to the production of flax than the north. Before the farmers of the south can supply Belfast market with fiber equal to that which is now imported from across the seas, there must, it is thought, be some intermediate agency by which the preparatory processes could be undertaken. Some 2 years ago a Belfast manufacturer made a very successful experiment with flax-growing in the south on the continental system. He rented 60 acres of land near Cork, which he had prepared for a flax crop; last season the land yielded 80 stones of fiber of the value of 10s. per stone and seed to the value of £6 per acre, the profit being over 300 per cent. This is probably an exceptionally favorable result, but it certainly shows that under proper conditions the productions of flax in the southern part of the island can be made to yield wealth beyond the Irish farmers' dreams of avarice.

It is proposed to give the continental system a trial in Tipperary. Mr. Dickson, a member of Parliament, has guaranteed a fund to start it with 100 acres. Its success would undoubtedly lead to the revival of a very important industry for the Irish people.

WILLIAM P. SMYTH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Huddersfield, March 6, 1891.

TELEGRAPHS OF NICARAGUA.

REPORT BY CONSUL NEWELL, OF MANAGUA.

The year 1862 saw the dawn of the telegraph system in the Republic of Nicaragua. The first line was constructed by the Transit Company between the ports of San Juan del Sur, on the Pacific coast, and Virgin Bay, on Lake Nicaragua, and was 15 miles in length. The line was afterwards abandoned by the Transit Company, and, so far as is known, nothing was done toward the system until the year 1876. In this year the Nicaraguan Government employed a Costa Rican to commence the construction of a national line. During this year 190 miles of telegraph were erected and offices opened for the transaction of business in the principal cities.

The line during the year 1879 was extended to Jinotepe, a distance of 12 miles, and communication established between Somotillo and Choluteca. On the 24th of June, 1880, the port of San Juan del Sul was connected with Liberia, Costa Rica, uniting the lines on the frontiers of the two Republics.

The line was reorganized in the latter part of the year 1880. An extension was made into the gold-mining district of Chontales. The frontiers of Nicaragua and Honduras were united in 1882 by the construction of a line between Ocotal and Paraiso.

It being found that the business of the country could not be properly transacted by the line then in operation, the Government erected a second line between Granada, Masaya, and Leon, these being the principal business centers of the Republic. During the year 1882 an office was opened at San Juan del Sur by the Submarine Cable Company. The year 1886 witnessed the introduction of the telephone system between Acoyapa and San Obaldo, the length of the line being 15 miles. As the country was steadily growing in population and commerce, it became necessary to extend the telegraph system, and in 1887 the line was extended to Managua, Masaya, and Granada, a distance of 33 miles. Another line was added in 1888 between Momotombo and Leon. The total number of miles of telegraph lines erected during the year 1889 was 334; telephone lines built for same period were 56 miles.

Since 1888 250 miles have been built at a cost of \$38,434.80. The line has also been prolonged from San Carlos, at the junction of Lake Nicaragua and the San Juan River, to Castillo, on the same river, a distance of 45 miles. This extension was made necessary on account of the location of a custom-house at the latter point. Here the national line joins that of the Canal Construction Company, which extends to San Juan del Norte, on the Atlantic coast, a distance of 95 miles, and has seven offices on the route.

In the 26 months ended October, 1888, there were transmitted 197,640 messages received from the public at a charge of \$57,671.95 and Government messages to the number of 106,083. For the last 21 months to July there were sent on account of the public 215,413 messages at a charge of \$63,773.30 and Government messages to the number of 190,034 at a charge of \$70,074.80.

The transmission of cablegrams at San Juan del Sur was greater than in the preceding 26 months; the excess is 15 per cent. in relation to those transmitted. There were transmitted in the 26 months anterior 5,224 messages; received, 5,619. There were transmitted in the last 21 months 5,452 messages; received, 5,585.

The total expenses of the telegraph department in salaries, works, construction of new lines, material, etc., was \$143,578.07.

In all the Republic there are 1,549 miles of telegraph and 61 miles of telephonic communication. The value of the system is \$150,000.

The telegraph staff consists of 1 director-general, 6 section bosses, 96 operators, 74 messengers, and 42 guards of the line. There has been recently established in Managua a national school of telegraphy, which is giving good results in training young men for the service.

If the telegraph system of the country were in the hands of private parties and the Government had to pay for its messages, the profits would range from \$2,000 to \$3,000 per month; but the yearly deficit is not to be taken into consideration when compared with the benefits bestowed upon the public.

WILLIAM NEWELL,

Consul.

UNITED STATES CONSULATE,

Managua, February 5, 1891.

CADIZ-AMERICAN TRADE.

REPORT BY CONSUL TURNER.

During the year 1890 forty-three vessels cleared from this consular district for, and fifty entered from, the United States. Twelve were American bottoms, of which number eight sailed to the United States and the others for foreign ports. Ten of the forty-three to clear were steamers, nine of which loaded with ore at Huelva for Philadelphia; the tenth was the first vessel of the newly established line of I. H. Andresen & Co. between Cadiz and New York and carried general cargo, calling at Lisbon and the Azores. It sailed December 25, 1890. The second vessel of this line, the *Oevenum*, sailed to-day. These steamers carry first, second, and third class passengers, and alternate with the Empresa Insular de Navegacion de Lisboa, another newly established line, which has equally good accommodations, and the first steamer of which, the *Vega*, cleared from here for New York on January 12, 1891, and the second of which is to sail March 10. Each did well, the last to sail, the *Oevenum*, taking from here 150 tons of cargo.

It has been quite impossible to secure data from Seville as to navigation, but the following report from San Lucar de Barrameda, the port at the entrance of the Guadalquivir River, will give a very clear idea of Seville shipping:

The number of vessels of all nations that visited San Lucar de Barrameda during 1890 was 501, with an aggregate tonnage of 168,271, as follows:

Flag.	Number.	Tonnage.
Spanish.....	248	67,668
British.....	98	46,185
Russian.....	52	20,481
German.....	24	20,512
Italian.....	25	11,702
Norwegian.....	34	9,805
Swedish.....	18	5,186
United States.....	6	2,888
French.....	6	749
Portuguese.....	4	594
Danish.....	3	1,743
Dutch.....	3	958

Of these all but twelve vessels, with a tonnage of 3,352, sailed up the river to Seville.

It will be seen by the inclosed return of trade that the direct imports from the United States to this consular district for the year reached \$2,028,165.03, and that the exports from here to the United States amounted to \$1,570,364.11 United States gold. The imports show an approximate increase of \$200,000. I say approximate, because, for 1889, the agent at Seville could not secure the amount or value of the goods imported by that port from the United States. The exports to the United States have increased during 1890 \$41,686.67.

I might add that the value of the American goods bought by this district is much in excess of \$2,028,165.03. This sum represents the direct trade only. Intermediate countries are credited in the Spanish custom-house reports with the indirect trade. For instance, stationery supplies, flags, etc., sent to this consulate from the Department come by way of England and are entered in the custom-house as being imported from there, instead of from the United States. I think a fair approximation of this indirect trade, which consists of meats, breadstuffs, medicines, machinery, notions, etc., would be \$500,000. The aggregate trade, then, of this consular district with the United States for 1890 would be \$3,648,529.14.

I am quite confident that the two lines of steamers before mentioned, if properly supported by importers and exporters here and in the United States, will do much to increase trade during the coming years.

English and German houses dispose of large amounts of American goods in Spain that United States merchants should sell direct to the Spanish importers. Every day representatives of French, English, and German houses can be seen soliciting orders of Cadiz dealers, but, so far as I know, there has never been a representative of an American firm in Cadiz for the purpose of developing trade by soliciting orders. While there can be no doubt that American goods can easily overcome all competition in this market, it is equally clear that they must first be introduced by men thoroughly equipped for their task.

For the class of American goods that, in my opinion, would meet a ready sale here interested parties are referred to former reports. For the sake of emphasis, however, I will again mention agricultural implements, furniture, and all other kinds of house-furnishing goods.

Table showing the imports and exports between Cadiz consular district and the United States for the year 1890.

Articles.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
Antiquities.....				\$154. 01
Brandy.....litres...			5, 147	2, 120. 83
Canary seed.....sacks...			275	1, 399. 05
Cork.....packages...			13,966	323, 694. 58
Sawdust.....do.....			2, 273	2, 992. 46
Cupreous sulphur ore.....kilogrammes...			17, 540, 205	102, 416. 35
Fining earth.....litres...			2, 081	109. 26
Hams.....kilogrammes...			155	136. 53
Lead.....packages...			11, 228	34, 888. 80
Licorice:				
Paste.....cases...			593	19, 312. 35
Root.....bales...			11, 216	34, 837. 79
Olives.....packages...			4, 086	228, 974. 14
Olive oil.....cases...			35	324. 19
Paintings.....				597. 01
Petroleum.....kilogrammes...	3, 879, 984	\$939, 487. 01		
Raisins.....do.....			17	15. 57
Salt.....lasts...			137½	732. 62
Soap.....boxes...			535	8, 475. 40
Staves.....pieces...	3, 193, 327	593, 552. 35		
Sundries.....				6, 596. 16
Tobacco (leaf).....kilogrammes...	1, 943, 479	468, 864. 16		
Wine:				
Sherry.....litres...			214, 145, 554	790, 403. 88
Light.....do.....			306	147. 06
Moguer.....packages...			1, 024	10, 375. 20
Red.....litres...			5, 857	722. 10
Port.....do.....			2, 933	897. 07
Spirit of.....do.....			316	141. 80
Pitch-pine timber.....loads...	3, 839	26, 261. 51		
Total.....		2, 028, 165. 03		1, 570, 364. 11

RECAPITULATION.

Places.	Imports.	Exports.
Cadiz.....	\$1, 062, 075. 52	\$75, 190. 69
Consular agencies:		
Jerez de la Frontera.....		487, 857. 11
Seville.....	929, 822. 00	678, 331. 13
Port St. Mary's.....		232, 421. 87
Huelva.....	26, 267. 51	102, 563. 31
Total.....	2, 028, 165. 03	1, 570, 364. 11

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, February 28, 1891.

TRADE AND INDUSTRIES OF THE BAHAMAS.

REPORT BY CONSUL McLAIN, OF NASSAU.

GENERAL COMMERCE.

The trade of the Bahamas has been quite prosperous during 1890, its volume exceeding that of any previous year for a long period, as is apparent from the following statement of exports and imports :

1887.....	\$1,568,646
1888.....	1,521,832
1889.....	1,489,285
1890.....	1,900,966

The increase for 1890 over 1889 is very decided, both in imports and exports, the former having increased by \$228,701 and the latter by \$182,980. There has also been a gratifying increase in the revenue of the colony from duties on imports and from other sources.

TRADE WITH THE UNITED STATES.

As we are specially interested in the commercial relations of the Bahamas with our own country, I submit the following table, covering a period of 5 years, to show the past and present condition of the same, which reveals a comfortable state of affairs for the United States:

Year.	Imports.	Exports.	Total.
1886.....	\$568,093	\$605,511	\$1,173,604
1887.....	670,016	547,860	1,217,876
1888.....	582,250	493,233	1,075,483
1889.....	605,475	528,822	1,134,357
1890.....	767,798	684,779	1,472,577

This condition of trade is most gratifying, showing that, while the total increase of general commerce was \$411,681, of this amount \$338,220 was obtained by the United States, or over 80 per cent. There was an increase in corn meal and hominy of \$5,000; flour, \$43,000; lumber and shingles, \$13,000; fertilizers, \$6,000; potatoes and vegetables, \$2,000; and spices, \$30,000. A large number of articles, such as woollens, cottons, silks, hardware, earthenware, boots, shoes, etc., pay an ad valorem duty of 20 per cent. (known as 20 per cent. goods), and the importation of these amounted to \$332,000 in 1890, as against \$231,000 in 1889, a peculiarly gratifying increase, since they are nearly all manufactured goods which are rapidly supplanting similar articles of British production.

This is a British colony politically, but commercially it has become a dependency of the United States. The reasons have been often stated in my reports, but will bear repetition as indications how other trade conquests may be made by our exporters and manufacturers. We control the trade of

the Bahamas because: (1) We furnish goods equal in quality with better style and finish than the English; (2) they can be laid down here, time and freight being considered, as cheaply as English goods; (3) we have prompt and reliable steam communication direct with New York under our own flag; (4) but not least, the fact that some enterprising American firms have studied the wants of these people and have devoted time and money to building up what is now a profitable, prosperous, and growing trade. The foregoing facts show how it has been done in the Bahamas. A word to the wise is, or ought to be, sufficient.

GENERAL INDUSTRIES.

Agriculture.—Field and garden crops, never very prosperous here, have fallen below the average in 1890, the principal cause being drought during the planting and growing season. In some of the islands, indeed, a moderate degree of destitution prevailed, calling for public assistance and relief, which the Government promptly furnished. This shortage in local crops accounts, in part, for the increase in the importation of hominy and flour, the quantity imported in 1890 from the United States, which furnishes nearly all the breadstuffs for the colony, being 48,000 barrels, against 37,000 in 1889, when crops were better. The culture of hemp has been added of late to the agriculture of the islands, concerning which I will speak further on.

Barks and woods.—The trade in these articles is unsteady, varying much in different years. The shipments in 1890 were of average value, reaching \$26,000. There was a decrease in dye and cabinet woods, but an increase of 150 per cent. in cascarilla, cinnamon, and dogwood barks. These articles go now mostly to the United States.

Fruits.—The orange orchards are making but slow recovery from the ravages of the scale insect some years ago, and but few new ones are as yet bearing. The crop of 1890, however, was much better than that of 1889, 3,246,000, worth \$19,286, being shipped, against 2,316,000, worth \$14,800, the preceding year. About \$5 per thousand is the ruling price obtained in the colony.

The pineapple crop of 1890 was abundant, was well handled, and realized good prices. The number shipped was 476,000 dozen, worth \$242,000, against 283,000 dozen, worth \$124,000, in 1889. Fertilizers were used largely during the last year, from which old and failing plantations derived signal benefits. For years planters have derided the idea of using manures on their fields, preferring to abandon them and seek fresh soil; but all this is now altered, and hereafter a good market will be opened for American fertilizers. Previous to 1889 little was imported, but during that year 950 barrels were bought, costing \$5,000. In 1890 nearly 2,000 barrels were imported, costing \$11,000, all coming from the United States. By a judicious use of fertilizers the old fields are made as good as new, the fruit is larger and better, and outlay is decreased perceptibly.

Sponges.—The sponge industry is still the most valuable one in the colony, giving steady employment to 500 or 600 vessels of small size and to

one-eighth of the entire population of the islands. The crop for 1890 was by far the largest and most valuable one shipped for years, reaching 915,000 pounds, worth \$306,896. In 1889 the crop was worth \$252,000; in 1888, \$240,000; in 1887, \$230,000; in 1886, \$216,000; in 1885, \$207,000; in 1884, \$224,000. The crop of 1890 was shipped as follows: To the United States, 708,000 pounds, worth \$236,000; Great Britain, 107,000 pounds, worth \$40,000; France, 50,000 pounds, worth \$16,000; Germany and Holland, 50,000 pounds, worth \$15,000.

The United States now substantially monopolizes the sponge trade of the Bahamas. Ever since 1884 the trade has been slowly but steadily drifting to our country, in which year \$120,000 worth went to England and \$104,000 worth went to the United States. The Bahama sponges are not of the finest quality, but all that can be obtained find a brisk market at good and increasing prices. I do not perceive any indications of a failure of the sponging grounds to yield an abundant supply.

Salt.—This industry continues in a state of serious depression, although 1890 shows a moderate improvement over 1889. The hopes of salt manufacturers were temporarily raised by expectations that under the new McKinley tariff bill the duty on salt of 6 cents per bushel might be removed and a market thus created in the United States, but they were disappointed and have again lost all heart in the business. The amount of salt shipped in 1890 was 190,000 bushels; in 1889, 80,000 bushels; in 1888, 222,000 bushels; in 1887, 137,000 bushels; in 1884, 382,000 bushels. Most of the salt shipped is taken by vessels for a return cargo to the United States solely in preference to going in ballast, hoping thus to make their freight. The salt is of the best quality, but depends on the United States for a market, which it can not get.

WRECKS AND CASUALTIES.

The number of disasters to American vessels in these waters during 1890, I am happy to state, is far below the average. Four put into this port in distress, made repairs, and proceeded upon their voyage. Only 2 vessels were lost in 1890, against 6 in 1889, 4 in 1888, 8 in 1887, and 5 in 1886. These 2 were the schooner *Ethel*, of Jacksonville, foundered at sea on April 5, and the schooner *Minnie E. Booth*, of Baltimore, stranded at Harbor Island on April 30. The latter was in ballast. No lives were lost. Both crews were cared for at this consulate.

NAVIGATION.

There has been no marked change in the carrying trade of the Bahamas during 1890, American ships maintaining their proportion of the same. There were 72 arrivals of American steamships during the year of 92,000 tons and 134 arrivals of American sailing vessels of 15,640 tons. The greater part of the trade is done in American bottoms. There is no direct line of either steam or sailing vessels to any port in Great Britain. During the year a local company was organized under the style of the New York and Nassau Steam-

ship Company (limited), and operations were begun by chartering a small Norwegian freight steamer, called the *Viking*, which for 6 or 8 months has been making monthly trips, carrying mails and freight, but no passengers. No subsidy is paid to this company. The service is between New York and Nassau. The enterprise is still in the experimental state and may or may not prove to be paying and permanent.

The regular mail, passenger, and freight business between Nassau and New York was, during the year, as for many years past, performed by an American line, the New York and Cuba Steamship Company, James E. Ward & Co., agents, and R. W. Parsons, esq., mail contractor. The ships are excellent, the service good. The colony pays this company an annual subsidy of about \$18,000.

INTERINSULAR STEAM COMMUNICATION.

Heretofore the islands of this group have depended for mail facilities and freight and passenger intercourse between themselves entirely upon small sailing vessels, a service tedious, uncertain, and unsatisfactory in all respects. Steam communication has long been desired, but was unobtainable until a few months ago, when a contract was entered into with Messrs. Pickford & Black, of Halifax, for a mail and general fortnightly steam service between Nassau and the principal ports in the outer islands. This contract is for 7 years at an annual subsidy of \$12,000, of which \$7,000 will be paid from Crown funds. The balance of \$5,000, which the colony will have to pay, is not much in excess of the cost of its present unsatisfactory system. The new service is to begin in June, 1891, and will unquestionably promote the social and commercial welfare of the colony to a large extent. An American steamship company made estimates for the service, but could not regard it as profitable at the above contract figures.

CABLE COMMUNICATION.

One of the greatest needs of this colony is cable connection with the outside world, its isolated condition being in many ways detrimental to its interests. Many efforts have been made in the past to accomplish this end, but they have all failed for one reason or another. There is now a reasonable prospect that a cable will shortly be laid. During a visit to Canada last summer Sir Ambrose Shea, the governor of the Bahamas, induced certain capitalists to look carefully into the project of laying a cable from Nassau to the Florida coast at Jupiter Inlet. In his speech on February 24, 1891, to the legislature, the governor, speaking on this subject, said:

I am in correspondence on the subject of telegraph cable communication between Nassau and Florida, and I trust at an early date to submit a definite proposal for your consideration.

As it is understood that the terms will in all probability be quite within the ability of the colony to meet, and as members of the legislature are known to be greatly in favor of a cable, there are good grounds for anticipating a favorable issue to the present effort for a cable line.

THE HEMP INDUSTRY.

My report in full upon the sisal industry of these islands and its then condition, submitted a year ago, created considerable interest abroad and induced innumerable inquiries at the consulate upon the subject. It seems to have been republished in England and to have obtained a wide circulation in all the British colonies. I am happy to state that during 1890 this industry has made a steady advance, no unfavorable features having been developed. Those who a year ago were already embarked in the industry are still promoting the same to the best of their ability, whilst some additional foreign capital has flowed into the colony. The latest investment is that of the Hon. Joseph Chamberlain, the well-known British member of Parliament, who has purchased substantially the whole of the island of Mariguana, which is about 25 miles long by a varying breadth of from 2 to 6 miles. The island is low and somewhat wooded, with a good soil for agriculture, with a population of about 300 souls. Mr. Chamberlain's two sons visited the colony, investigated the matter in person, and one of them will become the resident proprietor and manager of the enterprise, which will be developed with the utmost vigor.

One serious drawback up to this time has been the impossibility of procuring enough plants. As much land has been cultivated as plants could be found for, but their scarcity has seriously interfered with the more rapid development of the business. So anxious were people for plants that many crossed over to the Florida coast and within a few months brought away over 140,000 first-class sisal plants, which are to-day growing in Bahama soil. I may, in this connection, express the hope that my suggestion of a year ago, that the Department of Agriculture should call the special attention of the people of Florida to this possible source of wealth to themselves, has been acted upon, and that an investigation has been made in the premises.

The present prospect for plants is good, there being on January 1, 1891, a guaranteed crop within the next 6 months of 1,000,000 pole, and the same number of root plants. A report just submitted also shows that about 4,000,000 plants had been regularly planted out and are in a fine, healthy condition.

It has been apprehended that, if there was no limit to the quantity of Crown lands sold to be planted, there might be an overproduction of fiber enough to glut or depress the market badly. Indeed, the proposal made a year since by some London capitalists to take 200,000 acres was declined by the colonial authorities; and it has lately been stated on good authority that the governor has decided, for the present at least, to limit the total acreage to be sold to a trifle over 100,000 acres, which quantity can not affect the market or the labor question prejudicially. This is undoubtedly a wise decision; but it is only what was to have been expected at the hands of so careful and practical a man as Sir Ambrose Shea, by whom the entire undertaking has from the very beginning been managed with such discretion and skill as to impart unlimited confidence to the minds of all who have invested their capital in the enterprise.

American capital still remains unemployed in the Bahamas, probably because it is largely needed at home; but shrewd, calculating Scotch, English, and Canadian capitalists come here, investigate carefully, and invest their money unhesitatingly in this new hemp industry without a doubt of its ultimate success.

The present is, of course, a period of waiting, involving much outlay of money, working, and planting, the results of which within the next 2 or 3 years will be apparent in an abundant harvest and the beginning of large exports of sisal fiber. The few tons already shipped found a ready market, and samples sold in London were pronounced to be of the best possible quality and brought 40 per cent. higher prices than the Mexican or Yucatan fiber.

This industry is to do much for the Bahamas in the near future, and is already helping the colony materially in furnishing employment at fair prices to the people and in putting money in circulation. Our own people should view this prosperity of their neighbors with satisfaction, for it means enlarged trade and commerce with the United States.

FUTURE PROSPECTS.

The outlook for the Bahamas is very encouraging. The large increase in the volume of general trade is satisfactory. The improved condition of the revenue, which makes possible a reduction of the public debt and the promotion of certain improvements long needed, is most gratifying. Inter-insular steam communication, at a small cost to the colony, is to be begun in June, 1891, and it must be a material benefit and convenience, with a tendency to develop and encourage trade, production, and social intercourse. And last, but not least, there is almost an assurance of cable communication during the present year with the United States.

The old order of things seems to be rapidly on the wane in this colony, largely owing to the infusion of energy and genuine administrative ability on the part of the present indefatigable governor, Sir Ambrose Shea, in whom the entire people place the utmost confidence and trust; and with the coming prosperity will come in many improvements, comforts, advantages, and conveniences never before enjoyed by the people of the Bahamas.

The most kindly feeling obtains in this colony towards the people of the United States, and when to their intimate trade relations shall be added the proposed cable to Florida it would seem as if their commercial union would be complete.

THOMAS J. McLAIN, JR.,
Consul.

UNITED STATES CONSULATE,
Nassau, March 10, 1891.

THE PETROLEUM TRADE OF STETTIN.

REPORT BY CONSUL KELLOGG.

The import of petroleum, directly and indirectly, from the United States to the port of Stettin in the year 1890 exceeds considerably that of the year previous. Although the vessels engaged in the trade were fewer in number, their registered tonnage was greater. The number of these vessels entering this harbor during the above year was 48, loaded with 232,575 barrels of petroleum. Of this number, 35 arrived directly from the United States, and the remaining 13 vessels, with 18,852 barrels of oil, came from North German ports. In addition to the above, 37 barges, with 27,713 barrels of oil, after unloading 8,861 barrels at the wharves of Stettin, were towed on up the River Oder to supply the interior. These barges were from Hamburg.

The following table shows not only the total import of petroleum to this port during the past 7 years, but also the number of vessels engaged in this important trade, viz:

Year.	Number of vessels.	Imports.
		<i>Barrels.</i>
1890.....	48	281,396
1889.....	79	277,701
1888.....	89	309,532
1887.....	79	314,473
1886.....	84	331,189
1885.....	87	295,856
1884.....	110	269,698

Notwithstanding the heavy duty on American petroleum and petroleum barrels, the Russian article, at present prices, is not able to successfully compete with the American, many preferring to pay a trifle more for the latter, knowing, as they do, that it is the better of the two, possessing higher lighting power and being freer from impurities.

In accordance with the German law, all imported petroleum must be brought to the German standard of inflammability, in order to reduce as much as possible the danger of fires from exploding oil.

During the last three months no Russian petroleum has come into this port, and the shipments for the past year have been small indeed.

Some years ago the German Government did much to promote and facilitate the importation of Russian petroleum by lowering the duty on all petroleum arriving in tanks, instead of barrels, whether by land or water; at the same time an extra duty was put upon all petroleum barrels. This duty still exists and amounts to 4 marks per 100 kilogrammes. The duties are now as they were then, to wit, 6 marks per 100 kilogrammes to be deposited for the tare, 20 per cent. of the goods' weight being reckoned as the

weight of barrels as tare. These 4 marks are refunded when the barrels are reexported within 9 months after their entry. Much complaint has arisen by reason of this extra duty on barrels, it being simply a double duty, as the petroleum is dutiable per gross weight, which includes the barrel. A majority of the barrels remain here, especially those going to the interior; they are not reexported, and on that account the refundable duty is lost, the duty, of course, being paid on the arrival of the cargoes. A few weeks ago the president of the chamber of commerce of Stettin sent a petition to the German parliament urging that this extra duty on petroleum barrels be removed. In spite of all this good will, Russian petroleum can not hold its own, and it is being gradually driven out of this market. In order to get around the barrel duty and at the same time increase the importation of American petroleum, a company has been formed, composed of Hamburg, Bremen, and Stettin petroleum merchants, under the name of the German-American Petroleum Company, which intends building tank vessels for the transportation of petroleum from the United States. These tank vessels, ranging from 800 to 3,000 registered tons, with steam-power, will do away, to a great extent, with the importation of petroleum in barrels and, in fact, entirely supersede it, unless the barrel tax is removed.

The petroleum trade between this port and the United States is carried on entirely by sailing vessels, chiefly German, Scandinavian, Russian, and American, of from about 500 to 1,700 registered tons. They unload here in the shipping season—from March to October—about 50,000 barrels per month. These vessels bring over petroleum only and take back cargoes of rags, scrap glass, scrap iron, and cement.

Freights for petroleum from New York and Philadelphia to Stettin, per barrel containing 40 gallons, range from $2\frac{1}{2}$ to 6 marks.

It is the general opinion that the tank vessels will so reduce the freights that the cost of petroleum here will diminish greatly. Vessels drawing over $17\frac{1}{2}$ to $18\frac{1}{2}$ feet of water lighten in Schweinemünde at merchant's expense here.

JAMES KELLOGG,

UNITED STATES CONSULATE,

Consul.

Stettin, January 31, 1891.

Italian shipping bounties.—In Consul-General Bourne's report, "Italy in 1889," appears the following paragraph (CONSULAR REPORTS, No. 120, page 107): "*Sailing vessels.*—In 1888 premiums for navigation were paid to 361 sailing vessels, making 800 voyages, carrying 617,068 tons freight, and sailing 4,962,178 miles, aggregating \$——." Under date of March 13, 1891, Baron Fava, the Italian minister, in reply to a request from the Department for the figures necessary to complete the above paragraph, says that "the premiums paid during the year 1888 to the Italian sailing vessels amounted to 2,263,909.57 lire [\$436,934.55]."

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